

FY2013

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Action Plan

Printed 26 September 2013

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Acronym Translation Table.....	6
Installation Information.....	7
5-Year / Periodic Review Summary.....	9
Land Use Control (LUC) Summary.....	10
Cleanup Program Summary.....	21
Installation Restoration Program.....	22
IRP Summary.....	23
IRP Contamination Assessment.....	26
IRP Previous Studies.....	29
Installation Restoration Program Site Descriptions.....	43
HWAAP-B04 101-44 IMPOUNDMENT.....	44
HWAAP-B24A BLDG 336: FUEL STORAGE	45
HWAAP-B26 103-6 POL PIT.....	46
HWAAP-B27A 103-16 CATCHMENT PIT.....	47
HWAAP-I02 110 GROUP OPEN BURNING PIT.....	48
HWAAP-I09 49-10 PIT/LANDFILL #1 & #2.....	49
PBC@Hawthorne PBC.....	50
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	51
Installation Restoration Program Schedule.....	57
Installation Restoration Program Milestones.....	57
IRP Schedule Chart.....	63
Military Munitions Response Program.....	64
MMRP Summary.....	65
MMRP Contamination Assessment.....	66
MMRP Previous Studies.....	67
Military Munitions Response Program Site Descriptions.....	68
HWAAP-001-R-01 WALKER LAKE WATER TEST RANGE.....	69

Table of Contents

HWAAP-002-R-01 WALKER LAKE LAND TEST RANGE (TD).....	70
HWAAP-006-R-01 OLD BOMB ROCKET FIRING RANGE-SOUTH.....	71
HWAAP-008-R-01 WALKER LAKE LAND TEST RANGE.....	72
HWAAP-009-R-01 ASROC RANGES.....	73
HWAAP-010-R-01 ASROC RANGES (TD).....	74
HWAAP-012-R-01 PRE-1940 DETONATING PITS (TD).....	75
HWAAP-013-R-01 PRE-1940 DETONATING PITS.....	76
HWAAP-017-R-01 KICKOUT OUTSIDE NEW BOMB AREA.....	77
HWAAP-018-R-01 MONO LAKE.....	78
HWAAP-020-R-01 WHISKEY FLAT.....	79
HWAAP-021-R-01 WALKER LAKE WATER TEST RANGE (TD).....	80
HWAAP-022-R-01 OLD BOMB ROCKET FIRING RANGE-EAST.....	81
Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	82
MMRP Schedule.....	83
Military Munitions Response Program Milestones.....	83
MMRP Schedule Chart.....	84
Compliance Restoration.....	85
CR Summary.....	86
CR Contamination Assessment.....	87
CR Previous Studies.....	88
Compliance Restoration Site Descriptions.....	89
CCHWAAP-023 Old Bomb Fenced Disposal Area.....	90
CCHWAAP-B27B 103-8/10 OXIDATION DITCH.....	91
CCHWAAP-B27C 103-20 SURFACE IMPOUNDMENT.....	92
CCHWAAP-B29 103-41 Unlined Ponds.....	93
CCHWAAP-H02 Burn Pit @ pdo h02.....	94
CCHWAAP-I15 101-42 CATCHMENT PIT.....	95
Compliance Restoration Site Closeout (No Further Action) Sites Summary.....	96
Compliance Restoration Schedule.....	97
Compliance Restoration Milestones.....	97
CR Schedule Chart.....	98

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC) and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Hawthorne Army Depot (HWAD), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-CC	Army Environmental Databas-Compliance-Related Cleanup
AEDB-R	Army Environmental Database-Restoration
AGPR	Airborne Ground Penetrating Radar
AMC	Army Materiel Command
AOC	Area of Concern
ARRCOM	US Army Armament Material Readiness Command
ASROC	Anti-Submarine Rocket
AST	Aboveground Storage Tank
BGMP	Base-Wide Groundwater Monitoring Program
bgs	below ground surface
Bldg	Building
BRA	Baseline Risk Assessment
CA	Corrective Action
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI	Corrective Measures Implementation
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
COC	Contaminant of Concern
CPT	Cone Penetrometer Test
CR	Compliance Restoration
CS	Confirmation Sampling
CTT	Closed, Transferred and Transferring
CWM	Chemical Warfare Material
cy	cubic yards
DD	Decision Document
DDT	Dichlorodiphenyltrichloroethane
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DES	Design
DNT	Dinitrotoluene
DoD	Department of Defense
DZB	Day and Zimmermann/Basil Corporation
DZHC	Day and Zimmermann Hawthorne Corporation
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army
ESS	Engineering Services Section
FRA	Final Remedial Action
FS	Feasibility Study
FUDS	Formerly Used Defense Site
FY	Fiscal Year
GO/CO	Government Owned/Contractor Operated
GPR	Ground Penetrating Radar
GPS	Global Positioning System
GWM	Groundwater Monitoring

Acronyms

HE	High Explosive
HMX	High Melting Point Explosive
HRR	Historical Records Review
HRS	Hazard Ranking System
HWAAP	Hawthorne Army Ammunition Plant
HWAD	Hawthorne Army Depot
IAP	Installation Action Plan
IFE	Industrial Plant Equipment
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISO	International Standards Organization
IT	International Technology Corporation
K	thousand
kg	kilogram
KO	Contracting Officer
lb	pound
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MCPO	Marine Corps Programs Office
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mg	milligram
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
MW	Monitoring Well
N/A	Not Applicable
NDEP	Nevada Division of Environmental Protection
NFA	No Further Action
NIOTC	Naval Inshore Operations Training Center
NPL	National Priorities List
NV	Nevada
OB	Open Burning
OD	Open Detonation
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
PA	Preliminary Assessment
PBC	Performance-Based Contract
PCB	Polychlorinated biphenyl
PCP	Pentachlorophenol
PEP	Pyrotechnic, Explosives, and Propellants

Acronyms

PMCDIR	Project Manager for Chemical Demilitarization and Installation Restoration
POL	Petroleum, Oil, and Lubricants
POP	Period of Performance
ppb	parts per billion
ppm	parts per million
PRG	Preliminary Remediation Goal
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Triazacyclohexane
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSL	Regional Screening Level
SI	Site Inspection
SSTL	Site Specific Target Level
SVE	Soil Vapor Extraction
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCE	Trichloroethylene
TD	Transferred
TNB	Trinitrobenzene
TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TPH-d	Total Petroleum Hydrocarbons-diesel
TRC	Technical Review Committee
ug/L	micrograms per liter
UIC	Underground Injection Control
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency (now USACHPPM)
USATHAMA	US Army Toxic and Hazardous Materials Agency (now USAEC)
USEPA	US Environmental Protection Agency
USGS	US Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance

Acronyms

VOC Volatile Organic Compound

WWII World War II

Acronym Translation Table

CERCLA

Preliminary Assessment(PA)
Site Inspection(SI)
Remedial Investigation/Feasibility Study(RI/FS)
Remedial Design(RD)
Remedial Action (Construction)(RA(C))
Remedial Action (Operation)(RA(O))
Long Term Management(LTM)
Interim Remedial Action(IRA)

RCRA

= RCRA Facility Assessment(RFA)
= Confirmation Sampling(CS)
= RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
= Design(DES)
= Corrective Measures Implementation (Construction)(CMI(C))
= Corrective Measures Implementation (Operation)(CMI(O))
= Long Term Management(LTM)
= Interim Measure(IM)

Installation Information

Installation Locale

Installation Size (Acreage): 147236

City: Hawthorne

County: Mineral

State: Nevada

Other Locale Information

HWAD is located in Mineral County, Nevada (NV), approximately 135 miles southeast of Reno, NV. The depot covers an area of 147,236 acres and encloses three sides of the town of Hawthorne, which has a population of approximately 4,500 people. The installation is bounded by the Wassuk Mountain Range on the west, the Gillis Range on the east, and the Excelsior Mountains on the south. Walker Lake bounds the depot on the north.

Installation Mission

The mission of the HWAD is to:

- provide for the receipt, storage, rerehousing, preservation, packaging, surveillance, renovating, demilitarization/disposal, and issue of conventional ammunition, including response to Department of Defense (DoD) shipping contingency/wartime requirements as identified by higher headquarters to meet all operational munitions movement;
- provide US-wide depot redistribution for demilitarization and maintenance/renovation projects identified by the single manager for conventional ammunition;
- insure capability to ship/receive containerized munitions;
- operate the calibration laboratory;
- maintain an International Standards Organization (ISO) container maintenance/repair facility;
- maintain an ammunition maintenance capability; and
- provide high desert training facilities for DoD conventional forces and Special Forces military personnel.

The installation is the designated site for long-term storage of reused industrial plant equipment (IPE) and will receive, store, and be accountable for all IPE. The installation will perform special mission assignments as required.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

USAEC

Regulator Participation

State Nevada Division of Environmental Protection (NDEP)

National Priorities List (NPL) Status

HAWTHORNE ARMY DEPOT is not on the NPL

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

The community has expressed no sufficient, sustained interest in a RAB.

Installation Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Explosives, Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Soil

MMRP

Primary Contaminants of Concern: Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water

CR

Primary Contaminants of Concern:

Affected Media of Concern:

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201003	201104	2011
Complete	200108	200109	2001
Planned	201503	201604	2016

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
HWAAP-B05 101-15 Impoundment	HWAAP-B05
HWAAP-B06 101-13 Surface Impoundment	HWAAP-B06
HWAAP-B07 101-1 Catchment Pit	HWAAP-B07
HWAAP-B08 101-1 Catchment Pit	HWAAP-B08
HWAAP-B09 101-32 Catchment Pit	HWAAP-B09
HWAAP-B10 101-3 Catchment Pit	HWAAP-B10
HWAAP-B11A 101-31 Catchment Pit	HWAAP-B11A
HWAAP-B11B 101-34 Catchment Pit	HWAAP-B11B
HWAAP-B12 101-10 Catchment Pit	HWAAP-B12
HWAAP-B13 101-29/36 Catchment Pit	HWAAP-B13
HWAAP-B16 101-18 Catchment Pit	HWAAP-B16
HWAAP-B17A 101-20 Catchment Pit	HWAAP-B17A
HWAAP-B17B Bldg 101-20 Catchment Pit	HWAAP-B17B
HWAAP-B18 101-62 Catchment Pit	HWAAP-B18
HWAAP-B19 101-11 Catchment Pit	HWAAP-B19
HWAAP-B20 101-41 Catchment Pit	HWAAP-B20
HWAAP-B21 101-41/42 Catchment Pit	HWAAP-B21
HWAAP-B23 103-30 Catchment Pit	HWAAP-B23
HWAAP-B30 Building 101-16 Catchment Pit	HWAAP-B30
HWAAP-B31 101-65 Catchment Pit	HWAAP-B31
HWAAP-K05 Lust Site @ Bldg 117-3 UST	HWAAP-K05

Results Five Year Review completed on Schedule.

Actions None

Plans None

Recommendations and Implementation Plans:

N/A

Land Use Control (LUC) Summary

LUC Title: 101-1 Catchment Pit

Site(s): HWAAP-B08

ROD/DD Title: HWAAP-B08 101-1 Catchment Pit

Location of LUC

Building 101-1 located in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards, Markers

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-1 Surface Impoundment

Site(s): HWAAP-B07

ROD/DD Title: HWAAP-B07 101-1 Catchment Pit

Location of LUC

Building 101-1 in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-10 Catchment Pit

Site(s): HWAAP-B12

ROD/DD Title: HWAAP-B12 101-10 Catchment Pit

Land Use Control (LUC) Summary

Location of LUC

Catchment Pit is located east of Bldg. 101-10.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-13 surfaceimpoundment

Site(s): HWAAP-B06

ROD/DD Title: HWAAP-B06 101-13 Surface Impoundment

Location of LUC

This LUC is near Bldg. 101-13, in an area where bio was performed.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-15 Impoundment

Site(s): HWAAP-B05

ROD/DD Title: HWAAP-B05 101-15 Impoundment

Location of LUC

LUC is at the 101-15 impoundment located in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-18 Catchment Pit

Site(s): HWAAP-B16

ROD/DD Title: HWAAP-B16 101-18 Catchment Pit

Location of LUC

LUC is located northwest of the conveyor ramp for bldg. 101-18.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-20 Catchment Pit

Site(s): HWAAP-B17A

ROD/DD Title: HWAAP-B17A 101-20 Catchment Pit

Location of LUC

LUC is located five feet south of Bldg. 101-20 connected with HWAAP-B17B.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Land Use Control (LUC) Summary

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-29/36 Catchment Pit

Site(s): HWAAP-B13

ROD/DD Title: HWAAP-B13 101-29/36 Catchment Pit

Location of LUC

LUC is located between Bldgs 101-29 and 101-36 and south of Bldg 101-56.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-3 Catchment Pit

Site(s): HWAAP-B10

ROD/DD Title: HWAAP-B10 101-3 Catchment Pit

Location of LUC

101-3 Catchment Pit is located north of building 101-3

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Land Use Control (LUC) Summary

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-31 Catchment Pit

Site(s): HWAAP-B11A

ROD/DD Title: HWAAP-B11A 101-31 Catchment Pit

Location of LUC

Catchment pit is located on the north side of building 101-31.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-32 Catchment Pit

Site(s): HWAAP-B09

ROD/DD Title: HWAAP-B09 101-32 Catchment Pit

Location of LUC

The location is east of Building 101-2 and measures approximately 100 by 155 feet. This pit is up to eight feet deep.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Land Use Control (LUC) Summary

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-34 Catchment Pit

Site(s): HWAAP-B11B

ROD/DD Title: HWAAP-B11B 101-34 Catchment Pit

Location of LUC

Surface impoundment is located 40 feet north of building 101-34.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-41 Catchment Pit

Site(s): HWAAP-B20

ROD/DD Title: HWAAP-B20 101-41 Catchment Pit

Location of LUC

HWAAP-B20 consists of three inactive unlined surface impoundments located southwest of bldg 101-41.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

Land Use Control (LUC) Summary

LUC Title: 101-41/42 Catchment Pit

Site(s): HWAAP-B21

ROD/DD Title: HWAAP-B21 101-41/42 Catchment Pit

Location of LUC

HWAAP-B21 is located between bldgs 101-41 and 101-44.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-44 Catchment Pit

Site(s): HWAAP-B22A

ROD/DD Title: HWAAP-B22A 101-44 Catchment Pit

Location of LUC

HWAAP-B22A is an inactive unlined surface impoundment pit located west of bldg 101-44 and northwest of HWAAP-B22B.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-65 Catchment Pit

Site(s): HWAAP-B31

ROD/DD Title: HWAAP-B31 101-65 Catchment Pit

Land Use Control (LUC) Summary

Location of LUC

HWAAP-B31 is an inactive unlined surface impoundment pit located south of bldg 101-65.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 103-30 Catchment Pit

Site(s): HWAAP-B23

ROD/DD Title: HWAAP-B23 103-30 Catchment Pit

Location of LUC

103-30 Catchment Pit is located south of bldg 103-30.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: H03 Road/Grounds Waste OB

Site(s): HWAAP-H03

ROD/DD Title: HWAAP-H03 Road/Grounds Waste OB Pit

Location of LUC

This site is located east of Hwy 95 in close proximity to the Main Gate at HWAD.

Land Use Restriction: Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Notations in Master Plan

Date in Place: 199812

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: HWAAP-A05 Mustard Gas

Site(s): HWAAP-A05

ROD/DD Title: HWAAP-A05 Mustard Gas Disposal Area

Location of LUC

A05 is located in the eastern portion of HWAD's south magazine area, approximately two miles south of US Highway 95 at the foot of the Garfield Hills. A05 has a perimeter fence along the north, west, and south sides to prevent access by on-site personnel. The east side access is limited by Garfield Hills.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences

Types of Institutional Controls: Construction Permit, Dig Permits, Notations in Master Plan

Date in Place: 200111

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: HWAAP-B24 102-52 Acid Pit

Site(s): HWAAP-B24

ROD/DD Title: HWAAP-B24 102-52 Acid Pit

Location of LUC

The open pit is located adjacent to Building 102-52.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Land Use Control (LUC) Summary

Types of Institutional Controls: Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on land use

Date in Place: 200607

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200506

LUC Enforcement: 5 Year Reviews

Contaminants: PCBs, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: HWAAP-C01a/b

Site(s): HWAAP-C01A

ROD/DD Title: HWAAP-C01a/b 102-31 Rotary Deact Furnace

Location of LUC

HWAAP-C01a/b is located at 102-31. This area is fenced.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Dig Permits, Notations in Master Plan

Date in Place: 200009

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: HWAAP-I11 Bldg 49-9

Site(s): HWAAP-I11

ROD/DD Title: HWAAP-I11 Bldg 49-9 Pit/Landfill

Location of LUC

SWMU-I11 is in the southern part of HWAD's central magazine in the Building 49 group, approximately 4,000 feet north of US Highway 95.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Notations in Master Plan

Date in Place: 200106

Land Use Control (LUC) Summary

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, VOC

Additional Information

N/A

LUC Title: J12 Landscape Landfill

Site(s): HWAAP-J12

ROD/DD Title: HWAAP-J12 Landscape Landfill

Location of LUC

HWAAP-J12 is an inactive landfill used to dispose of landscape debris such as branches, brush and trees.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Notations in Master Plan

Date in Place: 199812

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections

Contaminants: ORGANICS

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

HWAD was originally constructed in 1928 as a US Naval Ammunition Depot. The early mission of the depot was to store, service, and issue ammunition to the Pacific area. Following World War II (WWII), the depot was actively involved in the demolition of various types of allied and enemy ammunition. The role of the depot was also expanded to include receiving, renovating, loading, maintaining, storing, and issuing ammunition, explosives, expendable ordnance items, and/or weapons and technical ordnance materials. The depot was also used to test weapons and dispose of unserviceable and/or dangerous ammunition and explosives. In 1977, the depot was transferred to the US Army and renamed Hawthorne Army Ammunition Plant (HWAAP). After the transfer, in 1980, HWAAP was re-designated as a government owned/contractor operated (GO/CO) plant operating under the direction of the former Day and Zimmermann/Basil Corporation (DZB).

From 1980 to 1994 the mission of the depot was to:

- receive, produce, assemble, load, issue, store, renovate, inspect, test, demilitarize, and dispose of conventional ammunition;
- operate and/or maintain in operational readiness cast and fuel-air explosive loading plants, rocket assembly plants, and medium/major caliber assembly lines;
- provide special/experimental high explosive (HE) casting, extruding, and pressing; fuel air explosive loading and support services to designated research and development activities;
- provide storage facilities for war reserve ammunition, and maintain designated ammunition in a state of readiness for mobilization, including assembling or otherwise providing base unit materials; and
- conduct testing of solid propelled munitions, HE warheads, mechanical and electronic fuses, cartridge cases, primers, rocket motors, and other ballistic devices.

On Oct. 1, 1994, HWAAP was redesignated as HWAD and its mission was revised. The installation has continued to fulfill its revised mission (shipping, storage and recycling of munitions) and operating under the direction of Day and Zimmermann Hawthorne Corporation (DZHC) [formerly DZB Corporation].

HWAD is currently a GO/CO facility. DZHC is the current operating contractor. The government and DZHC employ approximately 500 personnel.

HWAD is not on the NPL. Studies and investigations have been conducted under the guidance of the NDEP. Releases of hazardous substances, pollutants, or contaminants have been located within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and applicable Nevada state law. The regulatory process for the Installation Restoration Program (IRP) is governed under RCRA.

Installation Program Cleanup Progress

IRP

Prior Year Progress: The performance-based contract (PBC) was ongoing and addressed the sites.

Future Plan of Action: Base-wide groundwater actions will continue under the PBC. Five-year reviews and LUCs are planned for all sites under site CCHWAAP-I15.

MMRP

Prior Year Progress: The remedial investigation (RI) is currently underway for 13 sites and will continue into 2013. feasibility study (FS) contract has been awarded and will continue until fourth quarter 2014.

Future Plan of Action: RD and RA is anticipated for three sites, to begin in 2015. Five-year reviews and LUCs are planned for all sites under site CCHWAAP-I15.

CR

Prior Year Progress: A corrective measure implementation (CMI) contract was awarded and work began on sites CHWAAP-H02, CHWAAP-B29, CHWAAP-B27b, and CHWAAP-B27c.

A contract for an RI at CHWAAP-023 is in place and the RI has begun. An RI at CHWAAP-I15 was completed. All other CHWAAP sites are on an active range and will be addressed when the range closes. Remedy-in-place (RIP)/response complete (RC) is anticipated at CHWAAP-B29 in June 2013.

Future Plan of Action: Achieve RIP/RC by September 2014 at sites CHWAAP-H02, B27b, and B27c. The RI at CHWAAP-023 will be completed. CMI will be performed at site CHWAAP-I15.

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 129/122

Installation Site Types with Future and/or Underway Phases

1	Burn Area (HWAAP-I02)
1	Contaminated Ground Water (HWAAP-B24A)
1	Disposal Pit/Dry Well (HWAAP-B26)
1	Landfill (HWAAP-I09)
1	Spill Site Area (PBC@Hawthorne)
2	Surface Impoundment/Lagoon (HWAAP-B04, HWAAP-B27A)

Most Widespread Contaminants of Concern

Explosives, Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
HWAAP-A06A	OLD BOMB DISPOSAL AREA 1	IRA	OTHER	1988
HWAAP-B20	101-41 CATCHMENT PIT	IRA	COMPOSTING	1997
HWAAP-B32	101-41 CATCHMENT PIT	FRA	COMPOSTING	1997
HWAAP-H04	NAVYSIDE LANDFILL	IRA	OTHER	1997
HWAAP-J03	BLDG 70 DIESEL FUEL LEAK	FRA	BIOVENTING	1997
HWAAP-K04	ABOVEGROUND STORAGE TANKS AT BLDG 70	FRA	REMOVAL	1997
HWAAP-A09B	BATTERY DISPOSAL AREA	FRA	OTHER	1998
HWAAP-A08	CONSTRUCTION DEBRIS LANDFILL	IRA	OTHER	1999
HWAAP-B06	101-13 IMPOUNDMENT	FRA	BIOREMEDIATION	1999
HWAAP-B07	101-1 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B08	101-1 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B09	101-32 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B10	101-3 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B11A	101-31 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B11B	101-34 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B12	101-10 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B13	101-29/36 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B16	101-18 CATCHMENT PIT	FRA	BIOREMEDIATION - IN SITU	1999
HWAAP-B17A	101-20 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B17B	101-20 CATCHMENT PIT	FRA	BIOREMEDIATION	1999

IRP Summary

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
HWAAP-B18	101-62 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B19	101-11 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B22A	101-44 CATCHMENT PIT	FRA	OTHER	1999
HWAAP-B22B	101-44 CATCHMENT PIT	FRA	OTHER	1999
HWAAP-B23	103-30 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B30	101-16 CATCHMENT BASIN	FRA	BIOREMEDIATION	1999
HWAAP-B31	101-65 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-H05	OLD DEPOT LAUNDRY WASHOUT	IRA	OTHER	1999
HWAAP-I03	104-7 PIT #1	IRA	OTHER	1999
HWAAP-I04	104-7 PIT #2	IRA	OTHER	1999
HWAAP-J11	103-16 LANDFILL/PILE	IRA	OTHER	1999
HWAAP-J12	LANDSCAPE LANDFILL	IRA	OTHER	1999
HWAAP-K05	LUST SITE AT BLDG 117-3	FRA	BIOVENTING	1999
HWAAP-A04	BABBITT CLOSED LANDFILL	FRA	OTHER	2000
HWAAP-B05	101-15 IMPOUNDMENT	FRA	BIOREMEDIATION	2000
HWAAP-B27B	103-8/10 OXIDATION DITCH	FRA	OTHER	2000
HWAAP-B27C	103-20 SURFACE IMPOUNDMENT	FRA	OTHER	2000
HWAAP-H01	FIRE TNG PIT	FRA	OTHER	2000
HWAAP-I18	104-2 HYDROCARBON SPILL	FRA	BIOREMEDIATION - IN SITU	2000
HWAAP-J15	103-16 LANDFILL	IRA	OTHER	2000
HWAAP-K03	UST SITES - INST WIDE	FRA	BIOVENTING	2000
HWAAP-A11	MAG 18-5 DISPOSAL PIT	FRA	OTHER	2001
HWAAP-C01A	102-31 ROTARY DEACTIVE FURNA	FRA	OTHER	2001
HWAAP-I11	49-9 PIT/LANDFILL	FRA	OTHER	2001
HWAAP-J14	103-6 TRENCH	FRA	REMOVAL	2001
HWAAP-J28	108-3 CATCHMENT PITS	FRA	OTHER	2001
HWAAP-J29	BUILDING 103-5 LANDFILL	FRA	OTHER	2004
HWAAP-K10	BURIED PAINT	IRA	REMOVAL	2004
HWAAP-B20	101-41 CATCHMENT PIT	FRA	SOLVENT EXTRACTION	2005
HWAAP-I07	101-44 LANDFILL	FRA	REMOVAL	2005
HWAAP-B29	103-41 UNLINED PONDS	FRA	COMPOSTING	2006
HWAAP-B24	102-52 ACID PIT	FRA	INCINERATION	2009
HWAAP-B24A	BLDG 336: FUEL STORAGE	FRA	NATURAL ATTENUATION	2009
HWAAP-B26	103-6 POL PIT	FRA	SOIL VAPOR EXTRACTION	2009
HWAAP-B27A	103-16 CATCHMENT PIT	FRA	EX SITU SOIL TREATMENT	2009
PBC@Hawthorne	PBC	FRA	OTHER	2009
HWAAP-B27A	103-16 CATCHMENT PIT	FRA	REMOVAL	2011

IRP Summary

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
HWAAP-B26	103-6 POL PIT	FRA	FREE PRODUCT RECOVERY	2012
HWAAP-I02	110 GROUP OPEN BURNING PIT	IRA	BIOREMEDIATION	2012

Duration of IRP

Date of IRP Inception: 198407

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201412/204303

Date of IRP completion including Long Term Management (LTM): 204303

IRP Contamination Assessment

Contamination Assessment Overview

Since 1974, site investigations and groundwater monitoring (GWM) have been conducted by the Army, the US Army Environmental Hygiene Agency (USAEHA) [now the US Army Center for Health Promotion and Preventive Medicine (USACHPPM)], the US Army Toxic and Hazardous Materials Agency (USATHAMA) (now the USAEC), the US Geological Survey (USGS), the US Army Corps of Engineers (USACE), and numerous contractors in various areas throughout the installation. The primary contaminants of concern (COCs) are explosives [2,4,6-trinitrotoluene (TNT), trichloroethylene (TCE), 1,3,5-trinitro-1,3,5-triazacyclohexane (RDX), nitrate/nitrite, and unexploded ordnance (UXO)].

Prior to the transfer of HWAAP to the Department of Army, the USGS conducted a study in three phases under the direction of the Department of Navy to assess the possibility of groundwater contamination in the vicinity of the disposal pits at facilities 103-41 (HWAAP-B29) and 103-16 (HWAAP-B27A). The disposal pits were constructed to receive explosive waste from the demilitarization operation. The explosive waste included composition D (ammonium picrate), amatol (TNT plus ammonium nitrate), and RDX.

From November 1974 to November 1977, in Phases I and III, the USGS installed a total of 26 exploratory wells in the immediate proximity and northwest of the disposal area adjacent to demilitarization facility 103-41 (HWAAP-B29). Analysis of water samples taken from the wells showed levels of nitrate/nitrite above background and several of the wells were found to contain TNT. The highest concentrations of TNT [300 parts per billion (ppb) and 430 ppb] were detected in two separate determinations in one of the wells. The compound dinitrotoluene (DNT) was also detected from one of the wells. A study indicated a narrow plume of TNT contamination in a northwesterly direction.

From June 1976 to November 1977, in Phase II, the USGS installed eight exploratory wells in the vicinity of disposal pits adjacent to the demilitarization facility 103-16 (HWAAP-B27A). Chemical analysis of the groundwater samples revealed nitrate/nitrite levels to be above background, in most cases, and one sample from one of the wells showed TNT at a trace level. Based on further analysis during the investigation phase, chemical analyses have not reached action levels for groundwater.

In 1977, after the transfer of HWAAP to the Department of Army, the US Army Armament Material Readiness Command (ARRCOM) requested that USATHAMA, then known as Project Manager for Chemical Demilitarization and Installation Restoration (PMCDIR), conduct assessments of HWAAP to determine if there was any contamination resulting from past waste disposal practices.

The USATHAMA conducted the installation assessment between 1977 and 1981. Over 25 pits were identified as having received explosive wastes from loading and demilitarization operations in the production areas: 101, 102, 103, 104/49, and 108. The assessment concluded that TNT had migrated in a narrow plume to a distance of between 1,200 and 3,200 feet downgradient from 103-41 disposal pits. The migration rate of TNT was slower than the groundwater rate. The assessment also concluded that nitrogen compounds, primarily nitrate, were migrating in two plumes toward Walker Lake. Between May 1 and May 5, 1995, a study which was performed by the USAEHA showed that HWAD operations had no impact on Walker Lake.

During the assessment a disposal area for mustard and phosgene chemical munitions (HWAAP-A05) was located. The area was first used during WWII. It was last used in 1946 to decontaminate and bury an unspecified quantity of mustard munitions and their toxic agent contents. In 1991, an attempt was made to locate the munitions and to determine if any mustard agent remained in the soil or in the munitions. Several pits were located and excavated. The M15 chemical detectors gave positive readings for mustard in only one munition; however, laboratory analyses of samples taken from the munitions were negative. Testing for mustard vapors from the pits was negative.

Since the total pit was not excavated, the area could still have chemical agent munitions buried at the site.

Several test ranges were also identified in the assessment. Of particular concern is the range near Walker Lake where extensive munitions testing was conducted from WWII to the early-1970s. Most of the rounds impacted in the lake and many remain there as UXO. Live rounds are frequently found on the receding shoreline of Walker Lake.

Another AOC is the Naval Inshore Operations Training Center (NIOTC) and firing range. Explosive ordnance disposal (EOD) personnel documented this as one of the most heavily UXO-contaminated areas at HWAD.

The Rocket Test Area located near the southern boundary of HWAD also contains UXO in the impact area. Adjacent to the Rocket Test Area there is also a site that was used for fuse and ordnance disposal from WWII through the Korean War. The historical archive from this era concerning past operations at HWAD reported that demolition charges used to destroy the

IRP Contamination Assessment

Contamination Assessment Overview

munitions were so large that live munitions were found as far as one mile from the detonation pit. The area is considered extremely hazardous and is fenced to discourage trespassing.

Between May 1987 and August 1988 an evaluation of solid waste management units (SWMUs) was performed by the USAEHA. At that time, 82 SWMUs were identified. From July 1992 through December 1992 site screening inspections were conducted to verify the SWMUs, and data were gathered for the US Environmental Protection Agency (USEPA) to revise the Hazard Ranking System (HRS) score. As a result of the site screening inspections, a total of 123 SWMUs were identified.

The following RIs were conducted under the IRP - Defense Environmental Restoration Account (DERA):

- Group A (33 SWMUs) (beginning in 1993),
- Group B (55 SWMUs),
- Old bomb disposal sites (12 SWMUs) (UXO and explosive disposal and burned sites),
- Seven underground storage tank (UST) sites, and
- One aboveground storage tank (AST) site (beginning in 1994).

The Group A SWMUs consist of 29 catchment pits/ponds/impoundments sites, two disposal pit sites, one disposal pile site, and one landfill. The work performed includes surface geophysics survey, near-surface soil and subsurface soil sampling and analyses, and groundwater sampling at three existing wells. Baseline risk assessments (BRA) for the 29 sites were completed in November 1997. Groundwater sampling is included in the long-term GWM plan.

The Group B SWMUs consist of 23 landfills, 15 catchment pits/impoundments, two deactivation furnace areas, seven disposal pits/ditches/trenches, two open burning (OB) pits, five discharge/spill areas, and one mustard gas disposal area. The work performed included aerial photography, global positioning system (GPS) surveying, airborne geophysics surveying, surface geophysics survey, subsurface screening for utilities and UXOs, soil gas survey, soil sampling and analyses, and groundwater measurements.

Groundwater sampling at these sites is part of the GWM program: B04, I07, I15, B05, B06, J05, A11, A05, J08, J09, J06, J10, I06, J21, J22, J07, J24, J11/15, J14, B25, C01a/b, J16, J02, I02, J17, I05, I03/04, K18, I11, I17, B28a, B28b, B28c, B28d, I09/10, J23, I08, B27b, B27c, I13, I14, J27, J26, A08, J12, J28, J29, J04, J25, J13, and A03. BRAs for most of the sites were included in the RI/FS. Under the PBC, the USAEC, the HWAD, the NDEP, and the contractor agreed that revised risk assessments would be completed as necessary.

During the summer of 1997, a pilot study for windrow composting was performed. In this study, 2,500 cubic yards (cy) of soil containing TNT, [high melting point explosive (HMX), a byproduct of RDX], and DNT were treated at SWMUs B20, B32, and I15. Remediation was completed at these sites and they are currently going through the closure process. As part of the pilot study, regulatory requirements for the process as well as operating conditions were established for the site. The involved regulatory agencies determined that the remediation process would not require a containment building or a solid surface pad.

Using treated wooden ammunition boxes as a wood source was deemed acceptable and the original study was expanded to include 300 cy of ammonium picrate contaminated soil. Results indicate that this treatment process will successfully remediate soil contaminated with ammonium picrate for which, prior to this test, there was no accepted treatment methodology.

The old bomb disposal sites consist of six landfills, four OB burial pit sites, and two popping furnace sites. These sites were used to dispose of ordnance. An airborne ground penetrating radar (AGPR) survey was conducted to evaluate these sites. As a result of the survey and previous geophysical surveys, test pits are proposed to characterize geophysical anomalies and soil sampling is proposed to determine if a release of hazardous constituents has occurred. All the old bomb sites are currently being handled under the compliance restoration (CR) program. Please see that section of the IAP for further details about these sites.

In February 2008, a site tour was conducted by the NDEP, the USAEC, and the HWAD Environmental Office. On the tour numerous AOCs were identified. Picric acid and white phosphorus rounds with HE bursters were specifically identified and noted in the disposal pit at A06B. When the IRP information was reviewed, the installation did not have specific information regarding the location of these AOCs. The NDEP, the USAEC, and the HWAD Environmental Office commissioned a survey conducted in February and March 2007 by Marine Corps Programs Office (MCPO) to identify GPS locations of the current IRP sites and identify any additional AOCs. The results of the survey are being reviewed by the USAEC to determine a path forward for the expanded AOCs. The site narratives reflect the results of the 2008 survey. In 2009, four miles of fencing was installed around these sites to restrict access to the AOCs.

IRP Contamination Assessment

Contamination Assessment Overview

Seven UST sites are located at Building (Bldg) 13, 103-6, 101-25, 94, Camp Jumbo, Bldg 106-10, and 20-21. Between 1991 and 1993 tanks were removed and sampling results showed evidence of elevated levels of total petroleum hydrocarbons (TPH) in the soil ranging from about 6,000 milligrams per kilogram (mg/kg) to 73,000 mg/kg at depths ranging from five to 19 feet. For three sites (Camp Jumbo, Bldg 106-10, and Bldg 20-21) a decision document (DD) for no further action (NFA) was approved and signed by the regulatory agency on Oct. 3, 1996. Three bioventing systems at Bldgs 13, 101-25, and 103-6 will be monitored under a contract managed under the PBC.

The AST site, HWAAP-J03 (Bldg 70 diesel leak), consists of two 100,000-gallon ASTs that were installed in the 1940s and were leaking diesel fuel over a period of time. In 1991, the contaminated soils were removed by HWAD creating a large excavation pit. An RI conducted in 1994 indicated that soil contamination of TPH was at an elevated level of over 40,000 mg/kg in the excavation pit, and TPH in groundwater was at 11 milligrams per liter (mg/L). In February 1997 the two ASTs were removed. A bioventing pilot study was completed at this site. Stockpiled soils contaminated with petroleum hydrocarbons from 12 sites were collected at HWAAP-J03. This soil was used to fill the excavation pit. The enhanced bioventing test results indicate that bioventing may be able to remediate the site within eight years. This system will be monitored under the PBC. Windrow composting of sites within the 101 production area is complete. Site HWAAP-B04, located in the 101 Area, is scheduled for remediation by windrow composting. Composting is performed outdoors, on a specifically prepared soil pad.

This IAP includes only the IRP eligible sites and those listed in the Army Environmental Database - Restoration (AEDB-R).

In August 2001, the HWAD conducted a five-year review of the January 1996 soil action levels. Based on this review and the review of the NDEP soil action levels, the NDEP standards derived from USEPA Region IX preliminary remediation goals (PRGs) were adopted.

Cleanup Exit Strategy

In August 2006 a PBC was awarded to bring the following sites to RC: B04, B20, B24, B24A, B26, B27A, I02, I09, J03, K03(a, b and d), K05. In addition, GWM will be captured under a base-wide program. Five-year reviews and administrative LUCs will be tracked under site CCHWAAP-I15.

IRP Previous Studies

Year	Title	Author	Date
1967	A Brief Appraisal of the Water Resources of the Walker Lake Area, Mineral, Lyon, and Churchill Counties, NV	Reconnaissance Series Report No. 40, Everett, D.E. and F.E. Rush; NV DWR	JAN-1967
1974	Hydrologic Regimen of Walker Lake, Mineral County, NV	WR Information Series, Report No. 21., Rush, F.E.; NV DWR and USGS	JAN-1974
1975	Source of Nitrate in Water from Supply Well 8, Hawthorne Naval Ammunition Depot, Nevada	Van Denburgh, A.S., F.E. Rush; US Geological Survey Administrative Progress Report	JAN-1975
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase I, November 1974	US Department of the Interior, Geologic Survey	JUN-1975
1977	Preliminary Investigation of the Geothermal Resources near Hawthorne, NV. Project Report No. 50	Bohm, B.W. and R.L. Jacobsen; Water Resources Center, Desert Research Institute	JAN-1977
	Geothermal Potential of the Naval Ammunition Depot, Hawthorne, NV	Whelan, J.	JAN-1977
	Installation Assessment of Naval Ammunition Depot, Hawthorne, NV. Records Evaluation Report No. 114	US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD	AUG-1977
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase II, June 1976	USGS	NOV-1977
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase III	USGS	NOV-1977
1978	Analysis of Surface Water and Sediment Samples from HWAAP for TNT, Picric Acid and RDX	Energetic Materials Div, LCWSL, ARRADCOM, Dover, NJ	NOV-1978
1980	Groundwater Contamination by Percolating Explosives Wastes, HWAAP, Mineral County, NV, Phase IV, Reconnaissance Near Walker Lake	USGS	JAN-1980
	Groundwater Contamination by Percolating Explosives wastes, Hawthorne Army Ammunition Plant, Mineral County, NV, Phase II, Reconnaissance of the 103-16 Area	Van Denburgh, A.S., R.R. Squires, and D.B. Wood; US Geological Survey Administrative Progress Report	JAN-1980
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, NV, Phase III, Reconnaissance of the 103-41 Area	Van Denburgh, A.S., D.G. Schaefer, and D.B. Wood; US Geological Survey Administrative Progress Report	JAN-1980
1981	Field Investigation of Uncontrolled Hazardous Waste Sites, FIT Project, Site Inspection Report on Hawthorne	Ecology & Environment, Inc.	JAN-1981

IRP Previous Studies

1981	Title	Author	Date
	Army Ammunition Plant		
	Final Report, Survey and Assessment of Hawthorne Army Ammunition Plant, Hawthorne, Nevada	USATHAMA, Aberdeen Proving Ground, Maryland	SEP-1981
	Phase II, Hazardous Waste Management Special Study No. 39-26-0147-83, DARCOM Open-Burning/Open-Detonation Grounds Evaluation	HWAAP, Hawthorne, NV	OCT-1981
1982			
	Hazardous Waste Technical Consultation No. 38-26-0225-82, Waiver of Groundwater Monitoring Requirements	HWAAP, Hawthorne, NV	JUN-1982
	Water Quality Engineering Consultation No. 32-66-0176-83	HWAAP, Hawthorne, NV	DEC-1982
1983			
	Water Quality Engineering Special Study No. 32-24-0444-84, Evaluation of Wastewater Treatment Alternatives	HWAAP, Hawthorne, NV	MAY-1983
	Hazardous Waste Management Survey No. 37-26-0335-84	HWAAP, Hawthorne, NV	SEP-1983
	Closure/Post-Closure Plans, Hawthorne Army Ammunition Plant, Contract No. DAAA09-80-C-3011	Facilities Engineering Division, Day & Zimmermann/Basil Corporation	NOV-1983
1985			
	Hazardous Waste Investigation Report	Coulson, A.; NDEP at HWAAP	JAN-1985
	Letter, HWAAP to EPA Region IX. Information regarding potential releases from Solid Waste Management Units	HWAAP	NOV-1985
1987			
	Data on GW quality for the Walker Lake 1 degrees by 2 degrees quadrangle, Western Nevada and Eastern California	Open File Report #85-0648-1, Welch, A.H. and R.P. Williams; US Geological Survey	JAN-1987
1988			
	Groundwater Contamination Survey No. 38-26-0850-88. Evaluation of Solid Waste Management Units. Final Report. HWAAP, Hawthorne, NV 12-19 May 1987 and 1-5 August 1988	USAEHA	JAN-1988
	RCRA Facility Assessment, Hawthorne Army Ammunition Plant, TES IV Work Assignment No. 419	Jacobs Engineering	JAN-1988
	Services to Departments of Defense and Energy and other Government Agencies and their Contractors, Hawthorne Project, Hawthorne, NV	Pacific Environmental Resources, Inc. Walnut Creek, CA	JAN-1988
	Soil Survey Project after Action Report, Hawthorne Army Ammunition Plant	US Army Tech Escort Unit , US Army Corps of Engineers	JAN-1988
	Site Assessment of Parcels A, B, C, and D on Hawthorne Army Ammunition Plant, NV	US Army Toxic And Hazardous Materials Agency	JAN-1988
1989			
	Letter Arver Ferguson, USACE, Fort Worth District, from Jacqueline Wyland, USEPA Chief, Office of	Wyland, J., USEPA	JAN-1989

IRP Previous Studies

1989	Title	Author	Date
	Federal Facilities. Subject: Comments on Hazardous waste cleanup at HWAAP		
	Final Report Ordnance and Environmental Investigation at HWAAP, Hawthorne, NV, Volume 1,2, 3 and Appendices A-G	CEHND, International Technology Corporation (IT Corp)	MAY-1989
	Air Pollution Emission Assessment No. 42-21-0644-90	HWAAP, Hawthorne, NV	AUG-1989
	Industrial Radiation Survey #27-43-0029-89	DA	AUG-1989
	Investigation and Evaluation of Underground Storage Tanks	Hawthorne, NV, HWAAP	SEP-1989
	Hazardous Wastes Management Consultation Survey No. 37-66-0169-90	HWAAP, NV	OCT-1989
1990			
	Closure of Western Area Demilitarization Facility Bulk Slurry Incinerator and rotary Furnaces, Hawthorne Army Ammunition Plant, Nevada, Hazardous Waste Management Study No. 37-26-0479-91	US Army Environmental Hygiene Agency	JAN-1990
	Range Condition and Vegetation Inventory, Hawthorne Army Ammunition Plant (HWAAP), with maps	Rathburn, F.W.	JAN-1990
	Summary Report, Phase I Investigation for Closure of 101 Area Surface Impoundments	Day & Zimmermann/Basil Corporation by Waterworks, Escalon, CA	MAR-1990
	Geohydrologic Study No. 38-26-0371-91, Western Area Demilitarization Facility, HWAAP, Hawthorne, NV	USAEHA	OCT-1990
1991			
	Soil Survey of Hawthorne Army Ammunition Plant, NV	US Department of Agriculture, Soil Conservation Service	JAN-1991
	Disposal of Schweer Drive Housing Area, Hawthorne Army Ammunition Plant, Hawthorne, NV. Preliminary Assessment Screening No. 38-26-0380-91	US Army Environmental Hygiene Agency	FEB-1991
1992			
	Geohydrologic Study No. 38-26-KP66-92, Former Underground Storage Tank Sites, HWAAP, Hawthorne, NV	USAEHA	AUG-1992
	Preliminary Assessment Screening No. 38-26-KS38-92, Babbitt Landfill	USAEHA	AUG-1992
	Site Screening Inspection (SSI) for HWAAP, Hawthorne, NV	USATHAMA	DEC-1992
	Hazard Ranking System (HRS2) Score for HWAAP, Hawthorne, NV	USATHAMA	DEC-1992
1993			
	RCRA Part B Application for Hawthorne Army Ammunition Plant	Earth Technology Corporation,	JAN-1993
	Nevada Natural Heritage Program. In preparation. Database search and listing of sensitive species in selected areas of HWAAP	Tetra Tech, Inc.	NOV-1993
	Conceptual Workplan Underground Storage Tanks	Woodward Clyde	NOV-1993
1994			
	Final RFA work plan, 9 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994
	Final RFA work plan, 24 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994

IRP Previous Studies

1994	Title	Author	Date
	Revised pages of final RFA work plan for 24 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994
	Airborne Ground Penetration Radar Survey Report, Old Bomb Disposal Areas, Vol 1 & 2, HWAD	Airborne Environmental Services	FEB-1994
	Remedial Investigation, Final Work Plan, Vol 2, HWAAP	Tetra Tech, Inc.	MAY-1994
	Final Workplan Vol II: Investigation Plan Group B SWMU/SWMU Field Sampling & Analysis Plans,	Tetra Tech, Inc.	MAY-1994
	Final Site Safety & Health Plan (SSHP) RI	Tetra Tech, Inc.	JUN-1994
	Remedial Investigation, Final Work Plan, Vol 1, HWAAP	Tetra Tech, Inc.	JUN-1994
	Final Site Safety and Health Plan for RI, HWAAP	Tetra Tech, Inc.	JUN-1994
	Final Chemical Data Acquisition Plan/Remedial Investigation Plan Group B SWMU	Tetra Tech, Inc.	JUN-1994
	Remedial Investigation Group B SWMU/Comprehensive Certificates of Analysis BC Analytical Order #9407443, 9408007, 9408106	Tetra Tech, Inc.	JUN-1994
	RI Work Plan, Bldg 70 Diesel Leak, HWAAP	Tetra Tech, Inc.	AUG-1994
1995	UST Pilot remediation plan	DZB	FEB-1995
	Data & Documentation Transfer, Group B SWMUs, Vol 1-3	Tetra Tech, Inc.	FEB-1995
	Final RFA Report for 9 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	Final RFA Report for 24 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	Quality Control Summary Report, RFA of 9 & 24 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	RI Phase II Groups A&B SWMU - Monument Installation Plan & Cost Estimate	Tetra Tech	MAY-1995
	Monument Installation Plan, HWAD	Tetra Tech, Inc.	JUN-1995
	Site Assessment, Rodeo Grounds Community Pit and Dock 1 Borrow Pits, HWAD	CESPK	SEP-1995
	Airborne Ground Penetration Radar Survey, part 1-9, HWAD	Airborne Environmental Services	SEP-1995
1996	Group A & B SWMUs, Proposed Modification to CDAP, HWAD	Tetra Tech, Inc.	FEB-1996
	Final Closure Report for SWMUs: HWAAP-A03, B28a-d, I14, J04-10, J13, J17, J21, J22, J24, HWAD,	Tetra Tech, Inc.	FEB-1996
	Final Workplan Underground Storage Tank Sites Bldg 13, Enhanced Bioremediation Pilot Test	Tetra Tech, Inc.	FEB-1996
	Final RFI Work Plan, Group A SWMUs, HWAD	Tetra Tech, Inc.	MAR-1996
	Final Data Package, Group B SWMUs with Recommendations for Further Action, Vol 1, 2a & b, HWAD	Tetra Tech, Inc.	APR-1996
	Final Workplan RCRA Facility Investigation Group A SWMUS	Parsons	APR-1996
	Field Investigation Plan Amendment: RCRA Facility Investigation of Group A Solid Waste Management Units, HWAD	Ecology & Environment, Inc.	JUN-1996

IRP Previous Studies

1996

Title	Author	Date
Draft Design Technical Specifications for Remedial Bioventing Systems at Three Underground Storage Tank Sites, HWAD	Tetra Tech, Inc.	JUL-1996
Building 70, AST Removal, Project Work Plan, HWAD	Davy International	SEP-1996
Draft Summary of Report for the Building 13 Enhanced Bioremediation Pilot Test, HWAD	Tetra Tech, Inc.	SEP-1996
Final Site Safety and Health Plan, Remedial Investigation Group A and B Solid Waste Management Units	Tetra Tech, Inc.	SEP-1996
Babbitt Landfill Excavation Technical Memorandum	Ecology	OCT-1996
Final Site Safety & Health Plan (SSHP) RI for A&B SWMUs	Tetra Tech, Inc.	OCT-1996
Analytical Lab Report for Dioxins & Dibenzofurans for SWMU H01	Ecology	NOV-1996
Complete Review of the CHPPM Risk Assessment Review for the Group A&B SWMUs	Tetra Tech, Inc.	NOV-1996
Quality Control Summary Report for Additional Work at the Babbitt Landfill SWMU A04	Ecology	NOV-1996
Final Summary of Report for the Building 13 Enhanced Bioremediation Pilot Test, HWAD	Tetra Tech, Inc.	DEC-1996
Field Investigation Photolog: RCRA Facility Investigation of Group A Solid Waste Management Units, HWAD	Ecology and Environment, Inc.	DEC-1996

1997

Final Sampling and Analysis Plan	Tetra Tech, Inc.	JAN-1997
Final Design Technical Specifications for Remedial Bioventing Systems at Three Underground Storage Tank Sites, HWAD	Tetra Tech, Inc.	JAN-1997
Final Data Package, Group B SWMUs with Recommendations for Further Action, Vol 1, 2a & b, HWAD	Tetra Tech, Inc.	JAN-1997
Final Standard Operating Procedures for Ground Water Sampling at HWAD	Tetra Tech, Inc.	JAN-1997
Final Site Safety and Health Plan, Remedial Investigation Group A and B Solid Waste Management Units	Tetra Tech, Inc.	JAN-1997
Final Sampling & Analysis Plan RI Group A&B SWMU - Revised from 1/1/97	Tetra Tech, Inc.	FEB-1997
Final Technical Memorandum Background Soil Sampling	Tetra Tech, Inc.	MAR-1997
Draft Bldg 70, AST Removal Closure Report	Davy	APR-1997
Draft Site-Specific Human Health Risk Evaluation SWMU B24-102-52 Acid Impoundment,	Tetra Tech, Inc.	APR-1997
Final Workplan Bldg 70 Enhanced Bioremediation Pilot Test	Tetra Tech, Inc.	MAY-1997
Final RCRA Facility Investigation Report for Group A Solid Waste Management Units A-04, B-16, B-24, B-26 and H-01	Ecology & Environment, Inc.	MAY-1997
Draft Letter Report of the Bench-Scale Treatability Study for Bioremediating Ammonium Picrate in Soil	Tetra Tech, Inc.	JUL-1997
Quarterly Groundwater Monitoring Report 2nd Qtr/97 Appendix D	Tetra Tech, Inc.	JUL-1997

IRP Previous Studies

1997	Title	Author	Date
	Quarterly Groundwater Monitoring Report 1st Qtr/97,	Tetra Tech, Inc.	SEP-1997
	Quarterly Groundwater Monitoring Report 3rd Qtr/97	Tetra Tech, Inc.	NOV-1997
	Draft Report Bioremediation Pilot Study Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1997
	Final - Remedial Investigation Report SWMUs B05-B31	Tetra Tech, Inc.	DEC-1997
1998	Final Engineering Evaluation/Cost Analysis For Explosives Remediation, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	JAN-1998
	Draft Project work Plan, Additional Remedial Investigation SWMUs B-26, B27b and J-28, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc	JAN-1998
	1997 Annual Ground Water Monitoring Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	FEB-1998
	West 101 Production Area Soil Remediation Hawthorne Army Depot, Hawthorne, Nevada	US Army Corps of Engineers, Sacramento District	FEB-1998
	Final Project Work Plan, Installation of Remedial Bioventing Systems at Two Former UST Sites, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group	MAR-1998
	Final Soil Gas Implementation Technical Memorandum, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	APR-1998
	Building 70 Enhanced Bioremediation Pilot Test, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	APR-1998
	Final Bioremediation Pilot Study Report of Explosives in Soil, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	MAY-1998
	1st Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	MAY-1998
	Final Well Abandonment Work Plan, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	JUN-1998
	Soil Gas Results Technical Memorandum, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	Final Ground Water Sampling Work Plan and Quality Assurance Plan, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	2nd Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada,	Tetra Tech, Inc.	AUG-1998
	Draft Well Abandonment Closure Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	Sampling and Analysis Plan West 101 Production Area Soil Remediation, Hawthorne Army Depot, Hawthorne, Nevada	US Army Corps of Engineers, Sacramento District	AUG-1998
	Remedial Activity Report and Operations and Maintenance Manual, Installation of Remedial Bioventing Systems at Two Former UST Sites, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc.	AUG-1998
	Remedial Investigation Report SWMUs B26, B27b and J28, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc.	AUG-1998
	Final Well Abandonment Closure Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	SEP-1998
	Project Workplan West 101 Production Area Soil Remediation, Hawthorne Army Depot, Hawthorne,	Harding Lawson Associates	SEP-1998

IRP Previous Studies

1998	Title	Author	Date
	Nevada		
	Final RI Report for SWMUs J25, B04, B22a, B22b, B23, B27a, B29, I02, I07 & I15,	Tetra Tech, Inc.	OCT-1998
	Final RI Report for SWMUs A08, B20, and B27c	Tetra Tech, Inc.	NOV-1998
	Building 70 Enhanced Bioremediation Radius of Influence Test Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	Final RI Report for SWMU B32, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	3rd Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	Final RI Report for SWMUs H05, C01a/01b, B25, B27b, I03-I06, I17, I18, J11, J14, J15, J23, J28, J29 & H04	Tetra Tech, Inc.	DEC-1998
1999			
	Final RI Reports for SWMUs I08, I13, I09 and I10	Tetra Tech, Inc.	JAN-1999
	Final - Remedial Investigation Report SWMU I09/10 Bldg 49-10 Pits/Landfill	Tetra Tech	JAN-1999
	Final RI Reports for SWMUs J02, I11 and J16	Tetra Tech, Inc.	FEB-1999
	1998 Annual Groundwater Monitoring Report Appendix F	Tetra Tech, Inc.	FEB-1999
	Remedial Investigation Report SWMUS B-26, B27B & J-28	Tetra Tech	MAR-1999
	Final - Qtrly Groundwater Monitoring Report 1st Qtr 99 Appendix D (1 of 2)	Tetra Tech	APR-1999
	Final - Qtrly Groundwater Monitoring Report 1st Qtr 99 Appendix D (2 of 2)	Tetra Tech	APR-1999
	Final Qtrly Groundwater Monitoring Report 2nd Qtr 99	Tetra Tech, Inc.	JUL-1999
	Final - Qtrly Groundwater Monitoring Report 2nd Qtr 98	Tetra Tech	JUL-1999
	Final - Scope of Work Babbitt Landfill Design	USACE	SEP-1999
	Final - Workplan Remedial Investigations at SWMUS - H05 Old Depot Laundry Washout B20 Bldg 101-41 Catchment Pits & I09/10 Bldg 49-10 Pit/Landfill	Tetra Tech	SEP-1999
	Final Report Screening Survey SWMU B20	Gore Sorber	OCT-1999
	Final - Qtrly Groundwater Monitoring Report 3rd Qtr 99	Tetra Tech	OCT-1999
	Final Workplan In Situ Lead Remediation Treatability Study at SWMU C01A/B, Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	OCT-1999
2000			
	1999 Annual Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2000
	Final Workplan In-Situ Lead Remediation Treatability Study at SWMU C01A/B, Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	JUL-2000
	Final Workplan Bioremediation Pilot Treatability Study for Composting Explosives in Soil,	Tetra Tech, Inc.	AUG-2000
	Three Year Groundwater Monitoring Well Evaluation	Tetra Tech, Inc.	NOV-2000
	Further Investigation on HWAAP-B27c, I-II, J-14, J-28	Tetra Tech, Inc.	DEC-2000

IRP Previous Studies

2001

Title	Author	Date
Risk Assessment Information Paper # 39-EJ-5728-01	USCHPPM	JAN-2001
Letter work plan for Field Activities at I09/10, Draft RI Rpt Addendum for B27c	Tetra Tech, Inc.	FEB-2001
2000 2nd Qtr Groundwater Monitoring Report	Tetra Tech	FEB-2001
Draft RI Rpt Addendum SWMU B20 Bldg 101-41 Catchment Pits, Feb-01	Tetra Tech, Inc.	MAR-2001
HWAAP, Summer 2000, QA/QC summary, CCV, LCS, MS/MSD, Method Blank	Tetra Tech, Inc.	MAR-2001
Letter work plan for well abandonment, USGS106-16MW13 thru MW20 (8 wells)	Tetra Tech, Inc.	MAR-2001
Risk Assessment info paper no. 39-EJ-5726	Dept of Army	MAR-2001
Site Health & Safety Plan for USTs Removal at Bldg 101-42	Laguna Construction	MAR-2001
Workplan Underground Storage Tanks (USTs) Removal at Bldg 101-42	Laguna Construction	MAR-2001
Final Workplan Biodegradation of TPH Contaminated Soil Thru Landfarming	Laguna Construction	APR-2001
3rd Qtr Groundwater Monitoring Report	Tetra Tech	APR-2001
Draft - Remedial Investigation Report Addendum SWMU I-09/I 10 Bldg 49-10 Pits/ Landfill	Tetra Tech	APR-2001
Final Focused Feasibility Study & Workplan Design/Remediation of Gasoline Impacted Soil & Groundwater at Bldg 336	Laguna Construction	MAY-2001
Final RI Rpt/Phase III Investigation of TPH-Contaminated Soil & Groundwater at Bldg 336	Laguna Construction	MAY-2001
Removal Rpt Underground Storage Tanks (UST) Removal at Bldg 101-42	Laguna Construction	MAY-2001
Final Closure Doc for A05	Tetra Tech, Inc.	MAY-2001
2000 Annual Groundwater Monitoring Report	Tetra Tech, Inc.	MAY-2001
Final Decision Document SWMU A05	Tetra Tech, Inc.	JUN-2001
Draft-Natural Attenuation Design of TCE in GW SWMU I09/110 Building 49-10 Pits/Landfill	Tetra Tech, Inc.	JUN-2001
Draft Remedial Alternative Decision Document for SWMU I07, Building 101-44 Landfill	Tetra Tech, Inc.	JUN-2001
Final Report Addendum to RI report for A05	Tetra Tech, Inc.	JUN-2001
Final Work Plan, Explosive Soil Remediation SWMU B-29	Geofon	JUN-2001
Well Abandonment Closure Report 8 US Geological Survey Wells, Bldg 103 Area	Tetra Tech, Inc.	JUN-2001
Draft - Natural Attenuation Design of TCE in Groundwater SWMU I-09/ I 10 Bldg 49-10 Pits/ Landfill	Tetra Tech	JUN-2001
Draft Lead Treatability Study Report, C01a/b	Tetra Tech, Inc.	AUG-2001
Draft - Closure Decision Document for SWMU C01A / 01B Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	AUG-2001
Draft - Report 2000 Bioremediation Pilot Study for Explosives	Tetra Tech, Inc.	AUG-2001
Final - Remedial Investigation Report Addendum for the SWMU J28 Bldg 108-3 Catchment Pits	Tetra Tech, Inc.	OCT-2001

IRP Previous Studies

2001	Title	Author	Date
	Qtrly Groundwater Monitoring Report 3rd Qtr 2001	Tetra Tech	OCT-2001
	Qtrly Groundwater Monitoring Report 3rd Qtr 2001, Tetra Tech, 10/01/01	Tetra Tech, Inc.	NOV-2001
	Final - Decision Document SWMU A11, H01, H03, H04 Roads & Grounds Waste OB Pit,	Tetra Tech, Inc.	NOV-2001
	Asphalt Concrete Test Results Rotary Deactivation Furnace Bldg 102-31 Proj 125-111-01	Applied Engineering	DEC-2001
2002	Qtrly Groundwater Monitoring Report 4th Qtr 2001	Tetra Tech, Inc.	JAN-2002
	Summary of Hawthorne Army Depot Groundwater Monitoring Program	George Nichol	JAN-2002
	Hawthorne Figures (Map Info),	Tetra Tech, Inc.	JAN-2002
	Qtrly Groundwater Monitoring Report 4th Qtr 2001	Tetra Tech	JAN-2002
	Final - Evaluation of Potential Migration to Groundwater SWMU I09/I10 Bldg 49-10 Pits/Landfill	Tetra Tech, Inc.	FEB-2002
	Final - Natural Attenuation Design of TCE in Groundwater SWMU I09/I10 Bldg 49-10 Pits/Landfill	Tetra Tech, Inc.	MAR-2002
	Final - Workplan Groundwater Extraction Well at SWMU B04	SECOR	MAR-2002
	Letter Report Explosives Remediation SWMU B27A & B29 (Pad 03)	USACE	MAR-2002
	Draft - Sampling & Analysis Plan (SAP) for Groundwater Wells Installation & Sampling Bldg. 13, B04, B20 & I-09/I-10	Forsgren	MAR-2002
	2001 Annual Groundwater Monitoring Report,	Tetra Tech, Inc.	APR-2002
	5 Yr Groundwater Monitoring Well Evaluation 1997 - 2002 Vols I & II	Tetra Tech, Inc.	MAY-2002
	Closure Report Explosive Soil Remediation SWMU B-29 Vols 1-5	Geofon	JUN-2002
	Final - Remedial Investigation Report Addendum SWMU B29 Bldg 101-41 Catchment Pits	Tetra Tech, Inc.	JUN-2002
	Final - Sampling & Analysis Plan for Groundwater Wells Installation & Sampling Bldg 13, B04, B20 & I09/I10	Forsgren	JUN-2002
	2002 Baseline Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	JUL-2002
	Final - Sampling & Analysis Plan (SAP) for Groundwater Wells Installation & Sampling	Forsgren	JUL-2002
	Report Aug 06 - 07/02 Floating Product Investigation & Removal Effort Bldg 336	USACE	AUG-2002
	2001 Annual Groundwater Monitoring Report	Tetra Tech	AUG-2002
	Final - Remedial Investigation Report Addendum SWMU A11 Mag 18AT5 Disposal Pit	Tetra Tech, Inc.	SEP-2002
	Final - Remedial Investigation Report Addendum SWMU A11 Mag 18AT5 Disposal Pit Vol A - Lab Data Package	Tetra Tech, Inc.	SEP-2002
	Design Technical Memorandum Remediation of Gasoline-Impacted Soil & Groundwater at Bldg 336	Laguna Construction	SEP-2002
	July/02 Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	SEP-2002

IRP Previous Studies

2002

Title	Author	Date
Report Sep 10-11/02 Floating Product Investigation & Removal Effort Bldg 336	Laguna Construction	SEP-2002
Final - Remedial Investigation Report Addendum SWMU H05 Depot Laundry Washout	Tetra Tech, Inc.	SEP-2002
Final - Workplan Explosive Soil Remediation SWMU B29 & I07	Geofon	SEP-2002
Final - Field Data Report for Subsurface Electrical Vault Investigation	Cerrudo Services	SEP-2002
Rpt Oct 16-17/02 Floating Product Investigation & Removal Effort Bldg 336	USACE	OCT-2002
Jul/02 Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	OCT-2002
Remediation Report Explosive Soil Remediation SWMU B-29 & Areas 101 & 103 Vols 1 - 5	Geofon	OCT-2002
Final - Hawthorne Pilot Treatability Study to Stabilize Lead in Soil at SWMU C01A/01B Vol A - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Pilot Treatability Study to Stabilize Lead in Soil at SWMU C01A/01B	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol B - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol A - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol C - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Proposed Action Levels for Ammonium Picrate Using the USEPA Region IX Preliminary Remediation Goal for 2,4 Dinitrophenol	USACE	OCT-2002
Closure Report for Bldg 101-42 Facility Identification #J-00810 UST	USACE	NOV-2002
Floating Product Investigation & Removal Rpt Effort Bldg 336 Nov/02	USACE	NOV-2002

2003

Floating Product Investigation & Removal Bldg 336	USACE	JAN-2003
Final - Sampling & Analysis Report for Groundwater Wells Installation & Sampling Bldg 13, B04, B20 * I09/I10	Forsgren	FEB-2003
Mar/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	MAR-2003
Floating Product Investigation & Removal Rpt Bldg 336	USACE	MAR-2003
Apr/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	APR-2003
Remedial Investigation Report Addendum A SWMU I07 Bldg 101-44 Landfill	Chung & Associates	APR-2003
May/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	JUN-2003
Final - Remedial Investigation Report Addendum SWMU B29 Bldg 101-41 Catchment Pits	Tetra Tech, Inc.	JUN-2003
Jun/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	JUL-2003

IRP Previous Studies

2003

Title	Author	Date
2nd Qtr 2003 Groundwater Monitoring & Remediation Rpt for Bldg 336 Site	Laguna Construction	JUL-2003
Jul/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	AUG-2003
Final - Remedial Investigation Report Addendum A SWMU Bldg 101-44 Landfill	Chung & Associates	SEP-2003
August 2003 Floating Product Investigation & Removal Rpt Bldg 336	USACE	SEP-2003
Sep 2003 Floating Product Investigation & Removal Rpt Bldg 336	USACE	OCT-2003
Final Workplan Monitoring Well Installation Development * Sampling Bldg 336	Burleson	OCT-2003
Final Workplan Groundwater Monitoring & Product Recovery Bldg 336	SECOR	OCT-2003
3rd Qtr/03 Groundwater Monitoring & Remediation Rpt for Bldg 336 Site	Laguna Construction	OCT-2003
Final Rpt Groundwater Monitoring & Remediation Rpt for Bldg 336	SECOR	DEC-2003
4th Qtr/03 Groundwater Monitoring & Remediation Rpt for Bldg 336	USACE	DEC-2003

2004

Final Summary Rpt Monitoring Well Installation Development & Sampling Bldg 336 Site	Burleson	FEB-2004
Final Rpt Jan 04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	FEB-2004
Dec 03/Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	FEB-2004
Final - 1st Qtr Feb/03 Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2004
Final - 2nd Qtr May/03 Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2004
Final - Remedial Report SWMU I-07 Bldg 101-44 Landfill	Tetra Tech, Inc.	FEB-2004
Final Rpt Feb/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	MAR-2004
Final Rpt Mar/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	APR-2004
1st Qtr / 04 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	APR-2004
Final - Remediation Report SWMU B29 Ponds C, D, E, F, & K-I (ROJ #CA-130)	Chung & Associates	APR-2004
Final - Remedial Investigation Report Additional Soils Remedial Investigation SWMU I08 Bldg 70 Pit/Landfill	SECOR	APR-2004
Apr / 04 Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	MAY-2004
Final Rpt May 2004 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	JUN-2004
Jun / 04 Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	JUL-2004
2nd Qtr 2004 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	JUL-2004
Final - Work Plan Explosive Contaminated Soil Remediation SWMU B-29 & J29	Chung & Associates	JUL-2004
Final Rpt July/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	AUG-2004

IRP Previous Studies

Year	Title	Author	Date
2004	Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	SEP-2004
	Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	OCT-2004
	Revised 3rd Qtr/04 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	DEC-2004
2005	Final - Workplan HWAAP-K10 Buried Paint Remediation	SECOR	JAN-2005
	Final - Monitoring Well IRPMW08 Abandonment Monitoring Well IRPMW08A Installation w/CD	SECOR	JAN-2005
	Letter Rpt for Underground Injection Control (UIC) Permit, Quarterly Monitoring Requirements (Second Quarter 2005), Bldg 336	Geofon	SEP-2005
	Final Workplan, Groundwater Monitoring, Sampling and Analysis, Product Recovery, and Remediation System Operation and Maintenance Bldg 336	Geofon	SEP-2005
	Letter Rpt for Underground Injection Control (UIC) Permit, Quarterly Monitoring Requirements (Third Quarter 2005), Bldg 336	Geofon	OCT-2005
2006	Final Letter Rpt for Underground, Injection Control (UIC) Permit Fourth Quarter 2005, Bldg 336	Geofon	JAN-2006
	Final Report - 4th Qtr 2005 - Groundwater Monitoring and Sampling SWMU B04	Kurt Solander	JUN-2006
	4th QTR 2005 Final GWM & Sampling Report for B04	SECOR	JUN-2006
	Draft 2005 Annual GWM report	TtEMI	JUN-2006
	Final Summary Report for Monitoring Well Installation, Development & Sampling for I09/I10	Burleson	SEP-2006
	Work Plan for Monitoring Well Abandonment, New Well Installation & Sampling	TEMI	OCT-2006
	Final RA Report, J29	Geofon	OCT-2006
	Free Product Recovery Work Plan - Site B-24A (Bldg 336)	Plexus	OCT-2006
	Final work plan, SWMU B20 Borehole Invest. & SVE well abandonment	SECOR	OCT-2006
	Replacement pgs for final report, K10 Buried Paint Remediation	SECOR	OCT-2006
	HS and Accident Prevention Plan	Plexus	NOV-2006
	2007	Site Specific Work Plan, B27A	Plexus
2008	Final Base-Wide Annual Groundwater Monitoring Report	Plexus	APR-2008
	Final Interim Removal Work Plan, B24	Plexus	MAY-2008
	Final Site Specific Work Plan Investigation, I02	Plexus	JUL-2008
	Corrective Action Plan, I09 & I10	Plexus	AUG-2008
	Corrective Action Work Plan, B04	Plexus	AUG-2008

IRP Previous Studies

2009	Title	Author	Date
	Corrective Action Plan, B24A	Plexus	MAR-2009
	Final Base-Wide Annual Groundwater Monitoring Report	Plexus	APR-2009
	Draft First Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWMU K05. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Re-submittal Revised-Final Closure Report/Decision Document for SWMU K03d. Hawthorne Army Depot, Hawthorne, NV	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWMU K03a. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Final Closure Report/Decision Document for SWMU B20. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWUM J03. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Draft Closure Report/Decision Document for SWMU B04. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Revised-Final Closure Report/Decision Document for SWMU I09/10. Hawthorne Army Depot, Hawthorne, NV	Plexus	JUN-2009
	Final Annual 2008 Basewide Groundwater Monitoring Report. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Final First Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Draft Corrective Measures Study Report SWMU I02. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Draft Second Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	AUG-2009
	Final Corrective Action Plan SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	SEP-2009
	Final Closure Report/Decision Document 102-52 Acid Pit SWMU B24. Hawthorne Army Depot, Hawthorne, NV.	Plexus	SEP-2009
2010			
	Final Annual 2009 Basewide Groundwater Monitoring Report. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAR-2010
2011			
	DD NFA Buried Paint (K10)	Baywest	DEC-2011
2012			
	DD NFA 101-41/44 Catchment pit (B21)	Baywest	JAN-2012
	Final RI/FS 103-20 (version 2)	Baywest	FEB-2012
	RI/FS Addendum, 103-8/10 (B27b)	Baywest	FEB-2012
	Groundwater Report (BWGWP)	Plexus	MAR-2012
	104-3 Catchment Pit Final Tech Memo (B34)	Baywest	APR-2012
	Lumber Burn Pit, RCRA Corrective Action Remedy Selection (H02)	Baywest	APR-2012

IRP Previous Studies

2012

Title	Author	Date
Final RI/FS (B29)	Baywest	APR-2012

HAWTHORNE ARMY DEPOT
Installation Restoration Program
Site Descriptions

Site ID: HWAAP-B04

Site Name: 101-44 IMPOUNDMENT

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
Contaminants of Concern: Explosives
Media of Concern: Groundwater

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	201412
RIP Date:	N/A	
RC Date:	201412	

SITE DESCRIPTION

Site HWAAP-B04 is a double-lined surface impoundment approximately 140 by 240 by 15 feet, having a capacity of 586,000 gallons designed to collect explosive-contaminated wash-down water from demilitarization operations. The impoundment was never used, but was constructed using soil from a previous unlined impoundment that had collected explosive wash-down water from 1944 to 1977. The newer lined impoundment was constructed at the same location as the older unlined impoundment. A 1989 RI included collecting near surface soil, subsurface soil, and groundwater samples from within and adjacent to the impoundment. Explosives were detected in the soil samples and in the groundwater at levels up to 30 mg/L.

Additional RI work in 1994 included four surface soil samples collected from within the impoundment where visual staining of explosives was observed, and groundwater samples from existing wells. Elevated concentrations of explosives [240 mg/kg RDX and 22 mg/kg of 1,3,5-trinitrobenzene (TNB)] were detected in these soil samples. Groundwater samples detected high levels of explosives [2,600 micrograms per liter (ug/L) of RDX, 3.6 ug/L of 1,3,5-TNB, 18 ug/L of 4-amino-DNT, 40 ug/L of ammonium picrate]. TCE is also a COC at this site. Sixty-eight feet of cone penetrometer test (CPT) sounding was conducted at two locations to assess the optimal depths to collect subsurface soil samples. Explosive contamination exceeds NDEP action levels. Annual GWM began in 1997. One production well was installed in fiscal year (FY)04. Water from this well will be used to facilitate the bioremediation.

Between October 2005 and May 2006, a total of 5,920 cy of contaminated soil was excavated and treated. The last of the explosive-contaminated soil was excavated in 2009, and the impoundment was backfilled. The investigation to determine the extent of explosive contamination in groundwater surrounding the SWMU is ongoing under a PBC. Concentrations of explosives in groundwater above NDEP-approved action levels have been found at six of the 15 wells currently installed at the site. This site was part of the PBC for out-of-scope work. The contracting officer (KO) determined the PBC did not cover the remaining GW investigations and therefore a new contract is currently being acquired for completing the work. The award is expected in March 2013.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site ID: HWAAP-B24A
Site Name: BLDG 336: FUEL STORAGE

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	200601.....	200602
CS.....	200602.....	200705
RFI/CMS.....	200607.....	200705
DES.....	200607.....	200707
CMI(C).....	200807.....	200905
CMI(O).....	200905.....	204303
RIP Date:	200905	
RC Date:	204303	

SITE DESCRIPTION

Former Bldg 336 is located in the Central Magazine area of HWAD. There are three 10,000-gallon USTs at the site; two are out of service. In the past, they contained gasoline. The third UST stores diesel fuel and has an associated dispensing system. These USTs are double-lined and have an active alarm system to detect leaks. In August 1999, a leak was discovered in the single-walled piping that conveyed gasoline from two 10,000-gallon USTs to the gasoline dispenser island that was located in the proximity of the former UST. An estimated 5,000 to 7,000 gallons of gasoline were released based upon inventory reconciliation records. An estimated 600 cy of gasoline-impacted soil were excavated to depths of up to 20 feet below ground surface (bgs). The dispenser island and associated piping were removed, and the two USTs were taken out of service.

Since August 1999, 32 monitoring wells have been installed. In November 2000, during the first comprehensive GWM event, free-product was observed in monitoring wells MW08 and MW09 at reported thicknesses of 3.8 and 2.2 feet, respectively. During the monitoring period at the Bldg 336 vicinity, free-product has been observed in monitoring wells MW08, MW09, MW10, and MW19; monitoring wells MW06 and MW14 also have each been reported to have once contained free-product.

Corrective actions at the site included free product recovery, SVE, ozone sparging, and bioventing in soil and groundwater. These systems are no longer operating at the site, however the site remains in the corrective measures implementation-operation [CMI(O)] phase under the current PBC. The current site response is continued source removal using absorbent socks and monitored natural attenuation (MNA).

CLEANUP/EXIT STRATEGY

Operation of MNA under the CMI(O) phase will continue following the end of the PBC.

Site ID: HWAAP-B26
Site Name: 103-6 POL PIT

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	199812
DES.....	200607.....	200806
CMI(C).....	200601.....	201202
CMI(O).....	201204.....	204303
RIP Date:	201204	
RC Date:	204303	

SITE DESCRIPTION

Site HWAAP-B26 is an inactive unlined surface impoundment located north of Bldg 103-6. The impoundment measures 25 by 85 by eight feet. The impoundment operated from the 1940s to 1980s and received steam line blowdown water, fuel oil, crude oil, and other waste POL products. There is visible evidence of POL-stained soils in and around the pit.

In 1992, the impoundment was backfilled with soil almost to grade level. The pit is currently characterized by a depressed area approximately twice as large as the originally reported size of the impoundment. An above-line steam line running through the site deteriorated and was replaced in 2001.

The RI work in 1994 included surface soil and hand auger sampling, and CPT soundings. Two hand auger samples and two CPT soil samples were collected from within the pit and analyzed for explosives, metals, SVOCs, VOCs, PCBs, and TPH. All groups of chemicals were detected in the surface and subsurface soil below action levels except for TPH. The TPH above action levels [16,000 mg/kg of total petroleum hydrocarbon-diesel (TPH-d)] was detected in the soil. Additional investigation to determine the extent of TPH in groundwater was completed in May 2012. Under the current PBC, activities for the CMI phase include fuel recovery performed in two wells by a pneumatic skimmer system and manual bailing methods. Moreover, five additional wells are being sampled for fuel-related compounds annually. Product removal and operation of the system is being transferred to a new contract; the award is anticipated for spring/summer 2013.

CLEANUP/EXIT STRATEGY

Operation of MNA and source removal under the CMI(O) phase will continue following the end of the PBC.

Site ID: HWAAP-B27A
Site Name: 103-16 CATCHMENT PIT

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
Contaminants of Concern: Explosives
Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	199812
DES.....	200607.....	200709
CMI(C).....	200601.....	201101
CMI(O).....	200606.....	204303
RIP Date:	201101	
RC Date:	204303	

SITE DESCRIPTION

Site HWAAP-B27A consists of eight inactive unlined surface impoundments and two drainage ditches located northwest of the ordnance washout Bldg 103-16. The eight impoundments occupy a total area of 10 acres. Each impoundment is up to eight feet deep. There are two drainage ditches at the site. One extends northwest from the facility for approximately one-half mile and the other extends southeast of the facility and is branched to the northwest near the impoundments. The impoundments have eroded and are partially filled with windblown sand. There is visible evidence of several inches of ammonium picrate and TNT stained soils in the pits and sidewalls. Between 1946 and 1975 the drainage ditches and the pits potentially received up to 20,000 gallons of wastewater containing ammonium picrate, RDX, TNT, and red fuming nitric acid.

Groundwater samples from 1974 detected nitrates above 70 ug/L (USGS Phase II investigation). No significant levels of TNT, RDX, or ammonium picrate were detected in the groundwater. Groundwater remediation is not required.

The RI work in 1994 included collecting 15 surface soil samples, 14 hand auger samples, and seven CPT soil samples from the pits and the ditches and analyzing samples for explosives and metals. Explosives above action levels were detected in surface soils in the ditches and in the impoundments. In general, the concentrations decreased with depth. Concentrations of TNT were detected at 700 mg/kg and 340 mg/kg in surface soil samples and then decreased to 71 mg/kg at a depth of five feet. Additional sampling for ammonium picrate was performed in 2002 and confirmed high levels in the surface soil (within six to 12 inches).

In December 2010, a soil removal action was conducted, and 3,608 tons of soil was removed from the catchment pits, associated berms, drainage pipes, and concrete troughs at the site. Confirmation sampling (CS) results showed that concentrations in residual soil were below the established Tier II Site-specific Target Levels. The site was backfilled in 2011. A DD was approved in June 2012 that requires GWM in five wells on-site.

A DD and closure occurred on June 20, 2012, citing residual concentrations of explosives below site-specific target levels (SSTLs) based upon industrial Use.

CLEANUP/EXIT STRATEGY

Operation and monitoring for MNA under CMI(O) phase will continue following the end of the PBC.

Site ID: HWAAP-I02

Site Name: 110 GROUP OPEN BURNING PIT

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199207.....	199207
CS.....	199405.....	199501
RFI/CMS.....	200606.....	201403
IRA.....	200607.....	201403

RIP Date: N/A

RC Date: 201403

SITE DESCRIPTION

Previously, HWAAP-G02 and HWAAP-G03 were sub-sites of this site. Those two sub-sites have been removed from the AEDB-R and all future work will refer to site HWAAP-I02. HWAAP-I02 is a disposal area of approximately four acres that includes pits for wastewater treatment and open trenches used for OB and disposal of ordnance. Visible staining of explosives is present on the surface soils. The area appears to have been in operation from the early to late-1950s, based on aerial photographs; however, use and history of the site is not well documented.

Previous investigations in 1988, 1989, and 1992 included magnetometry surveys and exploration pits. Soil samples collected from these pits contained elevated concentrations of explosives and metals above state action levels.

The 1994 RI included 1.4 acres of 10 foot spacing GPR within a four-acre area of reconnaissance AGPR to delineate pits and trenches.

Four monitoring wells were installed to assess the impact to groundwater. Initially, concentrations of explosives in groundwater exceeded 70 ug/L with elevated concentrations of metals; however, since 1997, metals and explosives above action levels in groundwater were not detected.

In 2007, evidence of buried UXO was identified at the site. The NDEP has required additional investigations be conducted. The Engineering Services Section (ESS) submitted an IRA to begin May 2013.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-I09
Site Name: 49-10 PIT/LANDFILL #1 & #2

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199207.....	199207
CS.....	199405.....	199410
RFI/CMS.....	199410.....	201412

RIP Date: N/A

RC Date: 201412

SITE DESCRIPTION

Site HWAAP-I09 consists of two open pits near an area used to assemble ship mines, bombs and torpedo warheads. The period of operation is not documented. Wastewater and wash down water were reportedly discharged to these pits.

The 1994 investigation included 10 soil gas samples, six surface soil samples, and 15 subsurface soil samples collected from three borings to a depth of 56 feet. Three CPT soundings were advanced for a total of 106 feet to define the optimum depth to collect subsurface soils. The surface soil samples contained up to 1,260 mg/kg of TPH-d. Groundwater sampling showed hits of VOCs. Sewer line breakage was thought to be the source, but in 1999, sewer lines were investigated and the findings eliminated potential release points.

Wells were installed to evaluate concentrations of TCE in groundwater, which was observed above NDEP action levels. Investigation of TCE contamination in groundwater at SWMU I09 will be transferred to a new contract as the KO determined continuation of the groundwater investigation is outside the scope of the current PBC. The new contract is expected to be awarded in February 2013.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	200209.....	200309
RFI/CMS.....	200310.....	200403
DES.....	200404.....	200409
CMI(C).....	200601.....	200909
CMI(O).....	200606.....	201412

RIP Date: 200909

RC Date: 201412

SITE DESCRIPTION

This site tracks funding for the PBC. The PBC was awarded on Aug. 15, 2006 and is scheduled to end in December 2014. The PBC contract specifically addresses 11 sites and the Basewide Groundwater Monitoring Programs (BGMP). For those sites associated with this contract which have not achieved RC at the end of 2014, costs have been developed for CMI(O) under their site designations, not this site designation. The BGMP consists of monitoring at 25 wells not associated with specific site corrective measures, such as perimeter wells or wells associated with historical operation groups. Work under this PBC will be completed in December 2014.

CLEANUP/EXIT STRATEGY

Groundwater will be monitored for 30 years, then wells will be abandoned. Five-year reviews and LUC costs are tracked in site CCHWAAP-I15.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-A03	COAL ASH LANDFILL(NOT OPEN)	199810	NFA Decision Document signed by NDEP 07/21/99
HWAAP-A04	BABBITT CLOSED LANDFILL	200009	NFA Decision Document signed by NDEP 11/30/01
HWAAP-A05	MUSTARD GAS DISPOSAL AREA	201203	NFA Decision Document signed by NDEP 12/18/01
HWAAP-A06A	OLD BOMB DISPOSAL AREA 1	199209	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6A.
HWAAP-A06B	OLD BOMB DISPOSAL AREA 2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6B.
HWAAP-A06C	OLD BOMB DISPOSAL AREA 3	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6C.
HWAAP-A06D	OLD BOMB DISPOSAL AREA 4	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6D.
HWAAP-A06E	OLD BOMB DISPOSAL AREA 5	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6E.
HWAAP-A07	NAVAL INSHORE OPS TNG CNTR FIRING RANGE	198808	Active Site - Future cleanup will be under a RCRA Part B Permit
HWAAP-A08	CONSTRUCTION DEBRIS LANDFILL	200110	NFA Decision Document signed by NDEP 11/30/01
HWAAP-A09A	AMMO CAN PILES	199810	NFA Decision Document signed by NDEP 08/04/00
HWAAP-A09B	BATTERY DISPOSAL AREA	199803	NFA Decision Document signed by NDEP 03/22/00
HWAAP-A10	107-ROCKET IMPACT AREA	199709	MMRP active/inactive range site now under site HWAAP-001-R-01.
HWAAP-A11	MAG 18-5 DISPOSAL PIT	201203	NFA Decision Document signed by NDEP 1/14/02
HWAAP-B01	WADF IMPOUNDMENT #1	198808	SI determined there was no contamination
HWAAP-B02	WADF IMPUNDMENT #2	198808	SI determined there was no contamination
HWAAP-B03	WADF IMPOUNDMENT #3	198808	SI determined there was no contamination
HWAAP-B05	101-15 IMPOUNDMENT	199911	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 11/22/99.
HWAAP-B06	101-13 IMPOUNDMENT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed 11/30/01.
HWAAP-B07	101-1 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 11/30/01.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-B08	101-1 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B09	101-32 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B10	101-3 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B11A	101-31 CATCHMENT PIT	199909	NFA DD signed by state 2/14/01.
HWAAP-B11B	101-34 CATCHMENT PIT	199909	Closure DD was signed by the state 12/6/99.
HWAAP-B12	101-10 CATCHMENT PIT	200008	A NFA decision document for soil was signed by NDEP August 4, 2000.
HWAAP-B13	101-29/36 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD was signed by state 12/6/99.
HWAAP-B15	101-16 CATCHMENT PIT	199810	NFA Decision Document signed by NDEP 03/22/00
HWAAP-B16	101-18 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by state 4/20/01.
HWAAP-B17A	101-20 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by state 24 April 2000. Site for industrial use only
HWAAP-B17B	101-20 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP 4 August 2000. Site is for industrial use only.
HWAAP-B18	101-62 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP 2 March 2001. Site for industrial use only.
HWAAP-B19	101-11 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP on 20 April 2001.
HWAAP-B20	101-41 CATCHMENT PIT	200909	Action will be taken under site HWAAP-I15
HWAAP-B21	101-41/42 CATCHMENT PIT	199912	This site will now be handled under site CCHWAAP-I15.
HWAAP-B22A	101-44 CATCHMENT PIT	199909	NFA Decision Document signed by NDEP 03/13/01
HWAAP-B22B	101-44 CATCHMENT PIT	199909	NFA Decision Document signed by NDEP 03/09/01

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-B23	103-30 CATCHMENT PIT	200110	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by NDEP 30 November 2001; no construction allowed.
HWAAP-B24	102-52 ACID PIT	200909	NDEP signed final Closure Report/DD on October 6, 2009.
HWAAP-B25	103-7 INERT WASTE IMPOUNDMEN	199912	NFA Decision Document signed by NDEP 03/29/00
HWAAP-B27B	103-8/10 OXIDATION DITCH	200009	This site will now be handled under site CCHWAAP-B27B.
HWAAP-B27C	103-20 SURFACE IMPOUNDMENT	200009	This site will now be handled under site CCHWAAP-B27C.
HWAAP-B28A	108-20 PO SPILL CATCHMENT	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28B	108-20 PO SPILL CATCHMENT	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28C	104-8 EO SPILL Impoundment	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28D	104-10 EO SPILL BASIN	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B29	103-41 UNLINED PONDS	200609	Interim DD signed by state 22 Sep 1995. For groundwater purposes, this site will now be handled under site CCHWAAP-B29.
HWAAP-B30	101-16 CATCHMENT BASIN	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by NDEP on 22-Nov-99; no construction allowed.
HWAAP-B31	101-65 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels.
HWAAP-B32	101-41 CATCHMENT PIT	199709	NFA Decision Document signed by NDEP 04/20/01
HWAAP-B33	102-51 CATCHMENT PIT	199810	NFA Decision Document signed by NDEP 03/29/00
HWAAP-B34	104-3 CATCHMENT PIT	199812	Not eligible for ER,A/BRAC funding. Active Site -
HWAAP-C01A	102-31 ROTARY DEACTIVE FURNA	200109	NFA Decision Document signed by NDEP 11/30/01
HWAAP-C02A	117-3 WADF ROTARY DEACTIVE FURNACE	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-C03	DOCUMENT INCINERATOR	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-C04	OLD BOMB POPPING FURNACE 1	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C04.
HWAAP-C05	OLD BOMB POPPING FURNACE #2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C05.
HWAAP-D01	106-22 & 106-23 NONREACTIVE HW STORAGE	198808	Not eligible for ER,A/BRAC funding. Site is active.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-D02	115-9 & 113-73A REACTIVE HW STORAGE	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E01A	WADF WWTP	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E01B	WADF SEWAGE EVAP PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E02	HWAAP STP EVAP/PERC PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E03	HAWTHORNE SEWAGE EVAP PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-F01	TRANSFER STATION, PROP DISPOSE OFC(PDO)	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-G01A	OLD BOMB OB/OD GROUND 1	198909	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01A.
HWAAP-G01B	OLD BOMB OB/OD GROUND 2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01B.
HWAAP-G01C	OLD BOMB OB/OD GROUND 3 D AREA	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01C.
HWAAP-H01	FIRE TNG PIT	200006	NFA Decision Document signed by NDEP 7/21/11
HWAAP-H03	ROAD & GROUNDS WASTE OB PIT	199812	Site is tracked under site CCHWAAP-H03. It was determined to be within the boundaries of J12 which was closed April 19, 2001. The NDEP was petitioned to include HO3 in the April 19, 2001 closure and they concurred in a letter dated November 21, 2001.
HWAAP-H04	NAVYSIDE LANDFILL	200409	NFA Decision Document signed by NDEP 02/15/02
HWAAP-H05	OLD DEPOT LAUNDRY WASHOUT	200110	NFA Decision Document signed by NDEP 01/14/02
HWAAP-I01	NEW BOMB LANDFILL	199709	Not eligible for ER,A/BRAC funding - Active Site
HWAAP-I03	104-7 PIT #1	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I04	104-7 PIT #2	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I05	33-16 LANDFILL	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I06	SPILL SITE 30-5	199812	NFA Decision Document signed by NDEP 09/15/99
HWAAP-I07	101-44 LANDFILL	200503	NFA Decision Document signed by NDEP on 6/22/12.
HWAAP-I08	BLDG 70 PIT/LANDFILL	200312	NFA Decision Document signed by NDEP on 6/22/12.
HWAAP-I11	49-9 PIT/LANDFILL	200109	NFA Decision Document signed by NDEP 11/30/01
HWAAP-I13	BLDG 10 LANDFILL/DISCHARGE	199812	NFA Decision Document signed by NDEP 11/22/99

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-I14	BLDG 46 OIL SPILL	199903	NFA Decision Document signed by NDEP 10/31/01
HWAAP-I15	101-42 CATCHMENT PIT	199501	This site is tracked under CCHWAAP-I15.
HWAAP-I17	104-10 LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-I18	104-2 HYDROCARBON SPILL	200006	NFA Decision Document signed by NDEP 07/05/02
HWAAP-I19	NAVY BEACH TEST RANGE	199709	Listed under MMRP as HWAAP-009-R-01.
HWAAP-I22	OLD BOMB OPEN BURNING PIT	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I22.
HWAAP-I23	OLD BOMB/ROCKET METAL LANDFILL	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I23.
HWAAP-J02	115 GROUP BURN AREA/LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J03	BLDG 70 DIESEL FUEL LEAK	200809	Closure Decision Document - May 2009
HWAAP-J04	107 AREA DRUM STORAGE/LANDFILL	199909	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J05	DOCK 1 LANDFILL	199903	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J06	DOCK 2 LANDFILL	199903	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J07	DOCK 3 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J08	DOCK 4 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J09	DOCK 5 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J10	DOCK 6 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J11	103-16 LANDFILL/PILE	199912	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J12	LANDSCAPE LANDFILL	200006	NFA Decision Document signed by NDEP 04/19/01
HWAAP-J13	WADF SOUTH DUMP	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J14	103-6 TRENCH	200109	NFA Decision Document signed by NDEP 11/19/02
HWAAP-J15	103-16 LANDFILL	200012	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J16	111-113 GROUP BURN AREA/LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J17	THORNE DRUM AREA	199810	NFA Decision Document signed by NDEP 03/22/00
HWAAP-J21	BLDG 97 OLD DOCK AREA	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J22	50 GROUP PITS	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J23	TRENCH AT DUSTY ACRES AREA	199812	NFA Decision Document signed by NDEP 03/22/00

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-J24	TRENCH NEAR 50-60	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J25	THORNE AREA LANDFILL	199902	NFA Decision Document signed by NDEP 04/24/00
HWAAP-J26	LANDFILL TURN TABLE AREA	199709	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J27	LANDFILL CAMP JUMBO AREA	199709	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J28	108-3 CATCHMENT PITS	200106	NFA Decision Document signed by NDEP 11/30/01
HWAAP-J29	BUILDING 103-5 LANDFILL	200409	This site was consolidated with HWAAP-B29 for bioremediation.
HWAAP-K01	WALKER LAKE TEST RANGE	199709	MMRP active/inactive range site now under site HWAAP-001-R-01.
HWAAP-K02	WALKER LAKE TEST RANGE DISPOSAL PIT	199709	This site is a duplicate of site HWAAP-A10.
HWAAP-K03	UST SITES - INST WIDE	200809	NFA Decision Documents: K03A 6/2009; K03B 3/2011; K03C 2/1996; K03D 6/2009; K03E 4/2011; K03F 6/2012; K03G 4/2011.
HWAAP-K04	ABOVEGROUND STORAGE TANKS AT BLDG 70	199706	NFA Decision Document signed by NDEP 09/25/95
HWAAP-K05	LUST SITE AT BLDG 117-3	200809	Closure Decision Document - May 2009
HWAAP-K07	OLD BOMB DDT BURIAL SITE	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-K07.
HWAAP-K08	PAINT STORAGE LOCKER SHEDS	200305	NFA Decision Document signed by NDEP 05/06/03
HWAAP-K09	SUMP AND DISCHARGE PIPE	200305	NFA Decision Document signed by NDEP 05/06/03
HWAAP-K10	BURIED PAINT	200409	NFA Decision Document signed by NDEP December 2011.
HWAAP-K11	SKEET RANGE	200305	NFA Decision Document signed by NDEP 05/06/03

IRP Schedule

Date of IRP Inception: 198407

Past Phase Completion Milestones

1984

ISC (HWAAP-K05 - LUST SITE AT BLDG 117-3)

1988

SI (HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B01 - WADF IMPOUNDMENT #1, HWAAP-B02 - WADF IMPOUNDMENT #2, HWAAP-B03 - WADF IMPOUNDMENT #3, HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMENT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-C02A - 117-3 WADF ROTARY DEACTIVE FURNACE, HWAAP-C03 - DOCUMENT INCINERATOR, HWAAP-D01 - 106-22 & 106-23 NONREACTIVE HW STORAGE, HWAAP-D02 - 115-9 & 113-73A REACTIVE HW STORAGE, HWAAP-E01A - WADF WWTP, HWAAP-E01B - WADF SEWAGE EVAP PONDS, HWAAP-E02 - HWAAP STP EVAP/PERC PONDS, HWAAP-E03 - HAWTHORNE SEWAGE EVAP PONDS, HWAAP-F01 - TRANSFER STATION, PROP DISPOSE OFC(PDO), HWAAP-G01A - OLD BOMB OB/OD GROUND 1, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-K02 - WALKER LAKE TEST RANGE DISPOSAL PIT)

RFA (HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A06A - OLD BOMB DISPOSAL AREA 1, HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-A07 - NAVAL INSHORE OPS TNG CNTR FIRING RANGE, HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-A09A - AMMO CAN PILES, HWAAP-A09B - BATTERY DISPOSAL AREA, HWAAP-A10 - 107-ROCKET IMPACT AREA, HWAAP-B04 - 101-44 IMPOUNDMENT, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-B24 - 102-52 ACID PIT, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA)

PA (HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B01 - WADF IMPOUNDMENT #1, HWAAP-B02 - WADF IMPOUNDMENT #2, HWAAP-B03 - WADF IMPOUNDMENT #3, HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMENT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-C02A - 117-3 WADF ROTARY DEACTIVE FURNACE, HWAAP-C03 - DOCUMENT INCINERATOR, HWAAP-D01 - 106-22 & 106-23 NONREACTIVE HW STORAGE, HWAAP-D02 - 115-9 &

IRP Schedule

	113-73A REACTIVE HW STORAGE, HWAAP-E01A - WADF WWTP, HWAAP-E01B - WADF SEWAGE EVAP PONDS, HWAAP-E02 - HWAAP STP EVAP/PERC PONDS, HWAAP-E03 - HAWTHORNE SEWAGE EVAP PONDS, HWAAP-F01 - TRANSFER STATION, PROP DISPOSE OFC(PDO), HWAAP-G01A - OLD BOMB OB/OD GROUND 1, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-K01 - WALKER LAKE TEST RANGE, HWAAP-K02 - WALKER LAKE TEST RANGE DISPOSAL PIT) (HWAAP-A06A - OLD BOMB DISPOSAL AREA 1)
IRA	
CS	(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A06A - OLD BOMB DISPOSAL AREA 1, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-A07 - NAVAL INSHORE OPS TNG CNTR FIRING RANGE, HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-A09A - AMMO CAN PILES, HWAAP-A09B - BATTERY DISPOSAL AREA, HWAAP-A10 - 107-ROCKET IMPACT AREA, HWAAP-B04 - 101-44 IMPOUNDMENT, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-B24 - 102-52 ACID PIT, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2)
1989	
CS	(HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA)
1992	
PA	(HWAAP-I01 - NEW BOMB LANDFILL, HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-I05 - 33-16 LANDFILL, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-I15 - 101-42 CATCHMENT PIT, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-I19 - NAVY BEACH TEST RANGE, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J14 - 103-6 TRENCH, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J26 - LANDFILL TURN TABLE AREA, HWAAP-J27 - LANDFILL CAMP JUMBO AREA, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)
RFA	(HWAAP-I02 - 110 GROUP OPEN BURNING PIT, HWAAP-I09 - 49-10 PIT/LANDFILL #1 & #2, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)
ISC	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K03 - UST SITES - INST WIDE)
1994	
CS	(HWAAP-A06B - OLD BOMB DISPOSAL AREA 2)
SI	(HWAAP-I05 - 33-16 LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J14 - 103-6 TRENCH, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J26 - LANDFILL TURN TABLE AREA)
INV	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K05 - LUST SITE AT BLDG 117-3)
RI/FS	(HWAAP-B32 - 101-41 CATCHMENT PIT)
1995	
PA	(HWAAP-H04 - NAVYSIDE LANDFILL, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT)
SI	(HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-I15 - 101-42 CATCHMENT PIT, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 -

IRP Schedule

	DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J27 - LANDFILL CAMP JUMBO AREA, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)
INV	(HWAAP-K03 - UST SITES - INST WIDE)
CS	(HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-I02 - 110 GROUP OPEN BURNING PIT, HWAAP-I09 - 49-10 PIT/LANDFILL #1 & #2, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)
RI/FS	(HWAAP-I15 - 101-42 CATCHMENT PIT)
RFI/CMS	(HWAAP-A09A - AMMO CAN PILES)
CAP	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK)
1996	
PA	(HWAAP-K04 - ABOVEGROUND STORAGE TANKS AT BLDG 70)
RI/FS	(HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J26 - LANDFILL TURN TABLE AREA, HWAAP-J27 - LANDFILL CAMP JUMBO AREA)
CS	(HWAAP-I22 - OLD BOMB OPEN BURNING PIT)
CAP	(HWAAP-K05 - LUST SITE AT BLDG 117-3)
RFI/CMS	(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A09B - BATTERY DISPOSAL AREA)
1997	
RFI/CMS	(HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)
RD	(HWAAP-B32 - 101-41 CATCHMENT PIT)
IMP(C)	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK)
IRA	(HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-H04 - NAVYSIDE LANDFILL)
RA(C)	(HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-K04 - ABOVEGROUND STORAGE TANKS AT BLDG 70)
RI/FS	(HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-H04 - NAVYSIDE LANDFILL, HWAAP-I03 - 104-7 PIT #1, HWAAP-J14 - 103-6 TRENCH)
1998	
CMI(C)	(HWAAP-A09B - BATTERY DISPOSAL AREA)
DES	(HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-K03 - UST SITES - INST WIDE)
RD	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-

IRP Schedule

	62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT)
CAP	(HWAAP-K03 - UST SITES - INST WIDE)
RFI/CMS	(HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-B24 - 102-52 ACID PIT)
RI/FS	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT)
1999	
DES	(HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-B29 - 103-41 UNLINED PONDS)
IMP(C)	(HWAAP-K05 - LUST SITE AT BLDG 117-3)
RD	(HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-I18 - 104-2 HYDROCARBON SPILL)
RA(O)	(HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL)
RFI/CMS	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS)
CMI(C)	(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A09A - AMMO CAN PILES, HWAAP-B12 - 101-10 CATCHMENT PIT)
IRA	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT, HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL)
RI/FS	(HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMENT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT, HWAAP-I04 - 104-7 PIT #2, HWAAP-I05 - 33-16 LANDFILL, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)
RA(C)	(HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60)
2000	
RA(C)	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-H01 - FIRE TNG PIT, HWAAP-I18 - 104-2 HYDROCARBON SPILL)
SI	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-

IRP Schedule

	K10 - BURIED PAINT, HWAAP-K11 - SKEET RANGE)
CMI(C)	(HWAAP-A04 - BABBITT CLOSED LANDFILL)
LTM	(HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-J12 - LANDSCAPE LANDFILL)
IRA	(HWAAP-J15 - 103-16 LANDFILL)
PA	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-K10 - BURIED PAINT, HWAAP-K11 - SKEET RANGE)
IMP(C)	(HWAAP-K03 - UST SITES - INST WIDE)
RFA	(HWAAP-K07 - OLD BOMB DDT BURIAL SITE)
RD	(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-I11 - 49-9 PIT/LANDFILL)
2001	
RD	(HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-J14 - 103-6 TRENCH)
RA(C)	(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-J14 - 103-6 TRENCH, HWAAP-J28 - 108-3 CATCHMENT PITS)
LTM	(HWAAP-J15 - 103-16 LANDFILL)
RFI/CMS	(HWAAP-A05 - MUSTARD GAS DISPOSAL AREA)
2002	
LTM	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT)
RFI/CMS	(HWAAP-B20 - 101-41 CATCHMENT PIT)
2003	
RI/FS	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-K11 - SKEET RANGE)
RD	(HWAAP-J29 - BUILDING 103-5 LANDFILL)
RFA	(PBC@Hawthorne - PBC)
2004	
RI/FS	(HWAAP-K10 - BURIED PAINT)
IRA	(HWAAP-K10 - BURIED PAINT)
DES	(PBC@Hawthorne - PBC)
RA(C)	(HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-J29 - BUILDING 103-5 LANDFILL)
LTM	(HWAAP-H04 - NAVYSIDE LANDFILL)
RFI/CMS	(PBC@Hawthorne - PBC)
2005	
CMI(C)	(HWAAP-B20 - 101-41 CATCHMENT PIT)
RA(C)	(HWAAP-I07 - 101-44 LANDFILL)
2006	
RFA	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
CMI(C)	(HWAAP-B29 - 103-41 UNLINED PONDS)
2007	
CS	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
RFI/CMS	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
DES	(HWAAP-B24 - 102-52 ACID PIT, HWAAP-B24A - BLDG 336: FUEL STORAGE , HWAAP-B27A - 103-16 CATCHMENT PIT)
2008	
DES	(HWAAP-B26 - 103-6 POL PIT)

IRP Schedule

IMP(O) (HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K03 - UST SITES - INST WIDE, HWAAP-K05 - LUST SITE AT BLDG 117-3)

2009

CMI(C) (HWAAP-B24 - 102-52 ACID PIT, HWAAP-B24A - BLDG 336: FUEL STORAGE , PBC@Hawthorne - PBC)

CMI(O) (HWAAP-B20 - 101-41 CATCHMENT PIT)

2010

LTM (HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL, HWAAP-K07 - OLD BOMB DDT BURIAL SITE)

2011

CMI(C) (HWAAP-B27A - 103-16 CATCHMENT PIT)

2012

CMI(C) (HWAAP-B26 - 103-6 POL PIT)

LTM (HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A11 - MAG 18-5 DISPOSAL PIT)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
---------	-----------	--------------	-------------

Final RA(C) Completion Date: 201202

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of IRP at Installation (including LTM phase): 204303

HAWTHORNE ARMY DEPOT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-B04	101-44 IMPOUNDMENT	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-B24A	BLDG 336: FUEL STORAGE	CMI(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-B26	103-6 POL PIT	CMI(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-B27A	103-16 CATCHMENT PIT	CMI(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-I02	110 GROUP OPEN BURNING PIT	RFI/CMS						
		IRA						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-I09	49-10 PIT/LANDFILL #1 & #2	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PBC@Hawthorne	PBC	CMI(O)						

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 18/5

Installation Site Types with Future and/or Underway Phases

- 2 Explosive Ordnance Disposal Area
(HWAAP-012-R-01, HWAAP-013-R-01)
- 11 Firing Range
(HWAAP-001-R-01, HWAAP-002-R-01, HWAAP-006-R-01, HWAAP-008-R-01, HWAAP-009-R-01, HWAAP-010-R-01, HWAAP-017-R-01, HWAAP-018-R-01, HWAAP-020-R-01, HWAAP-021-R-01, HWAAP-022-R-01)

Most Widespread Contaminants of Concern

Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern

Groundwater, Sediment, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200009

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 202209/202209

Date of MMRP completion including Long Term Management (LTM): 202309

MMRP Contamination Assessment

Contamination Assessment Overview

The Phase III Army range inventory [also known as the closed, transferred, or transferring (CTT) inventory] was completed at HWAD in May 2003. The inventory identified 17 sites as eligible for the Military Munitions Response Program (MMRP). The Phase III inventory serves as the preliminary assessment (PA) under CERCLA.

The SI was finalized in September 2009. An RI is currently underway for 13 MMRP sites.

Cleanup Exit Strategy

The installation plans to execute follow-on phases/actions for the active MMRP sites as required in the individual site cleanup strategies.

MMRP Previous Studies

	Title	Author	Date
2003	Final US Army Closed, Transferring and Transferred Range/Site Inventory for Hawthorne AD, NV	TechLaw, Inc.	MAR-2003
2004	Property Eligibility Report, Hawthorne Army Depot, Nevada	TechLaw, Inc.	JUL-2004
2009	Final SI Report	FPM Group, URS	SEP-2009
2012	Final Work Plan	Parsons	AUG-2012

HAWTHORNE ARMY DEPOT
Military Munitions Response Program
Site Descriptions

Site ID: HWAAP-001-R-01

Site Name: WALKER LAKE WATER TEST RANGE

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This closed range in the northern part of the installation, formerly known as the HWAAP A10 107 Rocket Impact Area still owned by the US Army, is 796 acres. It was used from approximately 1942 until approximately 1975, primarily to test rockets of various sizes up to five-inch, depth charges, and other unidentified munitions. Although the IAP references depth charges being tested here, installation personnel state that empty depth charge cases were routinely deployed as buoys, raft buoys and swimming boundaries, and that over the years many of these have broken free, thus resulting in accounts of depth charge testing even though none actually occurred. The UXO investigations of these cases have revealed an empty condition with no explosive components.

Walker Lake is receding, continuously exposing old rocket munitions that were formerly on the lake bottom. Clearance efforts have found rockets, depth charges, shotgun shells, fuses, fragments of propellants, and TNT. The AEDB-R site identification for this site was HWAAP-K01. The area of this range is partly undeveloped installation land and partly on Walker Lake, which is used for recreational purposes. This portion of the range lies within the installation boundary; a separate portion lying outside the installation boundary is addressed under HWAAP-021-R-01, Walker Lake Water Test Range [transferred (TD)].

An RI/FS is currently underway. This munition response site (MRS) is located in the north central part of the installation. The historical range boundaries encompass both Army-owned and non-Army-owned property. The portion of the historical range located within the installation boundary on Army-owned property was designated as the Walker Lake Water Test Range MRS (HWAAP-001-R-01) and the portion located on non-Army owned property was designated as the Walker Lake Water Test Range (TD) MRS (HWAAP-021- R-01) for administrative purposes.

HWAAP-001-R-01 was reported as 743 acres in the CTT Range/Site Inventory Report and the final historical records review (HRR). However, it was subsequently determined that changes to the installation boundary resulted in 53 acres of the Walker Lake Water Test Range (TD) MRS (HWAAP-021-R-01) being located within the installation boundary and that this area should be part of the Walker Lake Water Test Range MRS (HWAAP-001-R-01). The affected area is located within Walker Lake. The resulting MRS encompasses 796 acres within the northern part of the installation and is partly on undeveloped installation land and partly within Walker Lake. This site has been realigned into HWAAP-008-01.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-002-R-01

Site Name: WALKER LAKE LAND TEST RANGE (TD)

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This 14-acre TD to the northeast of the installation, owned by the Bureau of Land Management, was used from approximately 1942 until approximately 1954 to test 7.2-inch Hedgehog depth charges. This range encompasses both 8,000- and 9,000-foot ranges, which were both shown on maps of this range. There is no possibility that the 7.2-inch Hedgehog depth charge could leave the installation boundary, as its maximum range as tested at HWAD was 300 yards, according to Operating Procedure 1415. No remediation activities are known to have taken place at this site and it was never owned by the DoD. The area of this range is undeveloped, but is likely used for recreational purposes. This portion of the range lies outside the installation boundary; a separate portion located inside the installation boundary is addressed under HWAAP-008-R-01, Walker Lake Land Test Range.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-006-R-01

Site Name: OLD BOMB ROCKET FIRING RANGE-SOUTH

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

This 3,504-acre transferred range located south of the Old Bomb Area in the southeastern portion of the installation is owned by the Bureau of Land Management and was used from approximately 1968 until approximately 1980 to test various rockets. Approximately 25,000 rounds were fired here. The length of the safety fan, 11,000 yards, was derived from munitions descriptions for air-to-ground five-inch rockets found in a Navy technical manual. This safety fan was assumed to be the nearest match in the manual for the rockets fired at this range. This area has been swept by the operating contractor of HWAD and by military EOD teams. This range was never owned by the DoD. A portion of the historical range boundary is included in the Whiskey Flats MRS (HWAAP-020-R-01). Munitions debris from this rocket testing has been reported on the adjacent Whiskey Flat MRS. NFA is anticipated and RC should occur in September 2013.

CLEANUP/EXIT STRATEGY

NFA is anticipated. The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-008-R-01

Site Name: WALKER LAKE LAND TEST RANGE

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201406
RD.....	201407.....	201501
RA(C).....	201509.....	201801
LTM.....	201810.....	202309

RIP Date: N/A

RC Date: 201801

SITE DESCRIPTION

This 506-acre closed range in the northeastern part of the installation is still owned by the US Army and was used from approximately 1942 until approximately 1954 to test 7.2-inch Hedgehog depth charges. The range encompasses both 8,000- and 9,000-foot ranges, which were both shown on maps of this range. There is no possibility that the 7.2-inch Hedgehog depth charge could leave the installation boundary, as its maximum range as tested at HWAD was 300 yards, according to Operating Procedure 1415. This range is part of a compliance agreement with the US Army and the state of Nevada and has been swept on numerous occasions for removal of munitions debris and UXO. The area of this range is undeveloped. This portion of the range lies within the installation boundary; a separate portion lying outside the installation boundary, HWAAP-002-R-01, Walker Lake Land Test Range (TD) was realigned to this site for the FS. This area has been amended to include the Walker Lake Impact area as well. The FS/DD contract was awarded April 2013

CLEANUP/EXIT STRATEGY

After the FS is completed, an RD, RA(C), and LTM are planned. Five-year reviews and LUC costs will be tracked in site CCHWAAP-I15.

Site ID: HWAAP-009-R-01
Site Name: ASROC RANGES

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This 6,619-acre closed range is still owned by the US Army and was used in 1957 and 1958, and again from approximately 1962 to 1965, to test anti-submarine rockets (ASROCs). These rockets only contained inert warheads. This range is the combination of three separate ranges where ASROCs were fired: ASROC Range A, ASROC Range B/Barlow Ranch, and Navy Beach Test Range. The ranges were combined into one ASROC range to reduce the confusion generated by the multiple overlaps of these three ranges with the Walker Lake Water Test Range. The area of this range is primarily within Walker Lake, which is used for recreational purposes, although some shoreline and adjacent land is also encompassed by this range. The shoreline is undeveloped. A portion of this range is also located outside the installation boundary and is addressed under HWAAP-010-R-01, ASROC Ranges (TD). It has been discovered that a cleanup action took place in the mid-70's. This range is part of a compliance agreement between NDEP and HWAD and is swept on a quarterly basis by the operating contractor. As Walker Lake continues to recede, additional MEC becomes exposed and continued cleanup is required.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site ID: HWAAP-010-R-01
Site Name: ASROC RANGES (TD)

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309
RIP Date:	N/A	
RC Date:	201310	

SITE DESCRIPTION

This 6,411-acre transferred range, partly owned by the state of Nevada and partly owned by the Bureau of Land Management, was used in 1957 and 1958, and again from approximately 1962 to 1965, to test ASROCs. These rockets only contained inert warheads. This range is the combination of three separate ranges where ASROCs were fired: ASROC Range A, ASROC Range B/Barlow Ranch, and Navy Beach Test Range. The ranges were combined into one ASROC range to reduce the confusion generated by the multiple overlaps of these three ranges with the Walker Lake Water Test Range. No remediation activities are known to have taken place at this range. The area of this range is primarily within Walker Lake, which is used for recreational purposes, although some shoreline and adjacent land is also encompassed by this range. The shoreline is undeveloped. A portion of this range is located inside the installation boundary, and is addressed under HWAAP-009-R-01, ASROC Ranges. This range was never owned by the DoD. It has been discovered that a cleanup action took place in the mid-70's. This range is part of a compliance agreement between NDEP and HWAD and is swept on a quarterly basis by the operating contractor. As Walker Lake continues to recede, additional MEC becomes exposed and continued cleanup is required.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-012-R-01
Site Name: PRE-1940 DETONATING PITS (TD)

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309
RIP Date:	N/A	
RC Date:	201310	

SITE DESCRIPTION

This 892-acre transferred site lying to the east of the installation is owned by the Bureau of Land Management and was used from approximately 1930 until approximately 1940, presumably for the detonation of obsolete munitions. Although documented information about this site, other than its presence on a map, was not available, an interviewee stated that the types of munitions that would have been detonated at such a site would include fuses, bombs, rockets, land mines, and mortars. This area represents a kickout area outside the installation boundary and was identified based on the longest kickout distance among the munitions likely detonated here. Installation personnel stated that current employees do not recall the use of these pits, that they have not seen these pits characterized in other reports, and that the recent unsigned, unapproved contractor-developed map created in 1980, which includes these pits, is most likely incorrect. No remediation activities are known to have taken place at this site, except a site reconnaissance in the area which identified only one inert piece of ordnance that was likely the result of kickouts from the Old Bomb Area detonations. The area of this site is undeveloped, but is most likely used for recreational purposes. This range was never owned by the DoD.

A programmatic decision was made to address this MRS under the active MMRP. While the property was found to be eligible for the Formerly Used Defense Sites (FUDS) program, the activity was not; thus, the decision and inclusion as an active MMRP site. An RI is currently underway and preliminary investigation results have been reviewed and the period of performance (POP) extends to September 2013. NFA is anticipated for this site.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site ID: HWAAP-013-R-01
Site Name: PRE-1940 DETONATING PITS

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 06
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201406
RD.....	201406.....	201501
RA(C).....	201502.....	201709
RIP Date:	N/A	
RC Date:	201709	

SITE DESCRIPTION

This 3,140-closed site in the eastern part of the installation is still owned by the US Army and was used from approximately 1930 until approximately 1940, presumably for the detonation of obsolete munitions. Although documented information about this site, other than its presence on a map, was not available, an interviewee stated that the types of munitions that would have been detonated at such a site would include fuses, bombs, rockets, landmines, and mortars. Installation personnel stated that current employees do not recall the use of these pits, that they have not seen these pits characterized in other reports, and that the recent unsigned, unapproved contractor-developed map created in 1980, which includes these pits, is most likely incorrect. No remediation activities are known to have taken place at this site, other than a site reconnaissance in this area which, according to an HWAD employee, identified only one inert piece of ordnance, which installation personnel say was likely the result of kickouts from the Old Bomb Area detonations. The area of this site is undeveloped, but is most likely used for recreational purposes; however, the area immediately surrounding the site is industrial. A second portion of this range is outside the installation boundary and is addressed under HWAAP-012-R-001, Pre-1940 Detonating Pits (TD). An RI is currently underway and preliminary investigation results have been reviewed. The site will be realigned to include only 2.7 acres which encompasses the burial pit and surrounding area. This pit potentially contains chemical warfare material (CWM). A FS/DD contract is anticipated to be awarded in March 2013.

CLEANUP/EXIT STRATEGY

After the FS is completed, RD and RA(C) are planned.

Site ID: HWAAP-017-R-01

Site Name: KICKOUT OUTSIDE NEW BOMB AREA

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309
RIP Date:	N/A	
RC Date:	201310	

SITE DESCRIPTION

This TD range is owned by the US Forest Service and consists of 58 acres located 22 miles south of the main installation. From approximately 1947 until approximately 1987 kickouts from the detonation of a variety of munitions, including mortars, rockets, torpedoes, fuses, and mines at the New Bomb disposal area landed here. Although the detonating area is still active, an interviewee stated that kickouts are no longer projected outside the boundary of the disposal area. This area was cleared of ordnance in 1987 and is currently undeveloped. HWAD operating contractor is required to perform annual sweep of this area. During the RI phase the area has been determined to be within the range fan of an active range and will be ineligible for Environmental Restoration, Army (ER,A) funding while the range is active.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-018-R-01
Site Name: MONO LAKE

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 06

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This MRS of 39 acres was used in 1965 to test 10 9,200-pound (lb) TNT charges. The site is owned by the state of California and is part of Mono Lake, located in east-central California. The detonations were part of a study to assess the destructive potential of water waves produced by man-made energy releases. The beach at the lake was reportedly entirely remediated in the 1970s within a few years after the completion of these tests. The remediation included removal of debris from the beach. The bottom of the lake was not remediated; however, the HWAD Environmental Coordinator indicated that nothing was present except for TNT charges that had already been detonated. The RI has been completed and the site is anticipated to require NFA. RC expected in October 2013.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site ID: HWAAP-020-R-01
Site Name: WHISKEY FLAT

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201406
RD.....	201406.....	201501
RA(C).....	201502.....	202209

RIP Date: N/A
RC Date: 202209

SITE DESCRIPTION

This 9,115-acre TD range, located south of the Old Bomb Area in the southeastern corner of the installation, is owned by the Bureau of Land Management. The range encompassed the safety fan for test rockets from approximately 1968 to 1975. It also received kickouts from OB/open detonation (OD) operations in the Old Bomb Area portion of the installation in 1946. An Army bulletin from that time noted that 10 personnel were in the Old Bomb Area destroying obsolete and defective ammunition, with 1,200 lbs of TNT used in each blast. Some of the kickouts from this operation went outside the installation boundary. In addition, three acres of the northernmost extreme portions of this area were part of the safety fan for the Carter Mortar Test Range, which was used to test mortars from approximately 1971 to 1990. Installation personnel stated that none of the munitions from the Carter Mortar Test Range would have gone outside of the installation boundary. As of mid-1995, 8,259 acres of Whiskey Flat had been cleared of hazardous ordnance and inert ordnance residue. The ordnance retrieved during this clearance project included rockets, rocket fuses, demolition charges, and TNT. What, if any, remediation activities have taken place in this area since 1995 is unknown. The area of this range is undeveloped, but is most likely used for recreational purposes. This range was never owned by the DoD. An RI is currently underway and preliminary investigations have been reviewed. The site is moving to the FS/DD phase and will be included in the contract expected to be awarded in March 2013.

CLEANUP/EXIT STRATEGY

After the FS, an RD and remedial action (construction) [RA(C)] are planned.

Site ID: HWAAP-021-R-01

Site Name: WALKER LAKE WATER TEST RANGE (TD)

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201309

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This 208-acre TD range to the north of the installation, owned by the state of Nevada and the Bureau of Land Management, was used from approximately 1942 until approximately 1975, primarily to test rockets, depth charges, and other unidentified munitions. Walker Lake is receding, continuously exposing old munitions that were formerly on the lake bottom. Although the IAP references that depth charges were fired here, installation personnel state that empty depth charge cases were routinely deployed as buoys, raft buoys and swimming boundaries, and over the years many of these have broken free, thus resulting in accounts of depth charge testing even though none actually occurred. UXO investigations of these cases have revealed an empty condition with no explosive components. Clearance efforts have found rockets, small arms, depth charges, fuses, fragments of propellants, and TNT. The area of this range is partly on undeveloped land to the northwest of Walker Lake and partly on Walker Lake. Both the undeveloped land and the lake are used for recreational purposes. This portion of the range lies outside the installation boundary; a separate portion lying outside the installation boundary is addressed under HWAAP-001-R-01, Walker Lake Water Test Range. This range was never owned by the DoD. Compliance agreement between NDEP and HWAD requires an operating contractor to perform quarterly surface sweeps for UXO. This site has been realigned to HWAAP-008-R-01 and will be addressed under the FS/DD contract expected to be awarded in March 2013.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: HWAAP-022-R-01

Site Name: OLD BOMB ROCKET FIRING RANGE-EAST

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201406
RD.....	201406.....	201501
RA(C).....	201502.....	202209

RIP Date: N/A

RC Date: 202209

SITE DESCRIPTION

This 15,496-acre TD range located east of the Old Bomb Area in the southeastern portion of the installation is owned by the Bureau of Land Management and was used from approximately 1968 until approximately 1980 to test various rockets. The length of the safety fan, 11,000 yards, was derived from munitions descriptions for air-to-ground five-inch rockets found in a Navy technical manual. This safety fan was assumed to be the nearest match in the manual for the rockets fired at this range. These rockets were fired from a fixed land launch point. The US Marine Corps has conducted several UXO sweeps throughout the area known as Old Bomb, including this area. Other than these sweeps, no remediation activities are known to have taken place in this area. The area of this range is undeveloped, but is likely used for recreational purposes. This range was never owned by the DoD. RI is currently underway and prelim investigation has been reviewed. The site will move to FS/DD Phase with a reduced footprint. FS/DD contract is expected to be awarded in March 2013.

CLEANUP/EXIT STRATEGY

After the FS, an RD and an RA(C) are planned.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-007-R-01	1958 ARMED FORCES DAY AREA	201208	Final SI (2009) recommended NFA at this site for both MEC and MC.
HWAAP-011-R-01	1957 ARMED FORCES DAY AREA	200909	Final HRR determined this site was eligible for the FUDS MMRP; therefore, it is not eligible for the Active MMRP.
HWAAP-015-R-01	COREY PEAK/TV HILL	200909	Final HRR determined this site was eligible for the FUDS MMRP; therefore, it is not eligible for the Active MMRP.
HWAAP-016-R-01	FUZE TEST AREA	201208	Final SI (2009) recommended NFA at this site for both MEC and MC.
PBA@MR HWAAP	PBA for MMRP	201201	PBA is fully funded.

MMRP Schedule

Date of MMRP Inception 200009

Past Phase Completion Milestones

2002

RFA (PBA@MR HWAAP - PBA for MMRP)

2003

PA (HWAAP-001-R-01 - WALKER LAKE WATER TEST RANGE, HWAAP-002-R-01 - WALKER LAKE LAND TEST RANGE (TD), HWAAP-006-R-01 - OLD BOMB ROCKET FIRING RANGE-SOUTH, HWAAP-007-R-01 - 1958 ARMED FORCES DAY AREA, HWAAP-008-R-01 - WALKER LAKE LAND TEST RANGE, HWAAP-009-R-01 - ASROC RANGES, HWAAP-010-R-01 - ASROC RANGES (TD), HWAAP-011-R-01 - 1957 ARMED FORCES DAY AREA, HWAAP-012-R-01 - PRE-1940 DETONATING PITS (TD), HWAAP-013-R-01 - PRE-1940 DETONATING PITS, HWAAP-015-R-01 - COREY PEAK/TV HILL, HWAAP-016-R-01 - FUZE TEST AREA, HWAAP-017-R-01 - KICKOUT OUTSIDE NEW BOMB AREA, HWAAP-018-R-01 - MONO LAKE, HWAAP-020-R-01 - WHISKEY FLAT, HWAAP-021-R-01 - WALKER LAKE WATER TEST RANGE (TD), HWAAP-022-R-01 - OLD BOMB ROCKET FIRING RANGE-EAST)

2009

SI (HWAAP-001-R-01 - WALKER LAKE WATER TEST RANGE, HWAAP-002-R-01 - WALKER LAKE LAND TEST RANGE (TD), HWAAP-006-R-01 - OLD BOMB ROCKET FIRING RANGE-SOUTH, HWAAP-007-R-01 - 1958 ARMED FORCES DAY AREA, HWAAP-008-R-01 - WALKER LAKE LAND TEST RANGE, HWAAP-009-R-01 - ASROC RANGES, HWAAP-010-R-01 - ASROC RANGES (TD), HWAAP-011-R-01 - 1957 ARMED FORCES DAY AREA, HWAAP-012-R-01 - PRE-1940 DETONATING PITS (TD), HWAAP-013-R-01 - PRE-1940 DETONATING PITS, HWAAP-015-R-01 - COREY PEAK/TV HILL, HWAAP-016-R-01 - FUZE TEST AREA, HWAAP-017-R-01 - KICKOUT OUTSIDE NEW BOMB AREA, HWAAP-018-R-01 - MONO LAKE, HWAAP-020-R-01 - WHISKEY FLAT, HWAAP-021-R-01 - WALKER LAKE WATER TEST RANGE (TD), HWAAP-022-R-01 - OLD BOMB ROCKET FIRING RANGE-EAST)

CS (PBA@MR HWAAP - PBA for MMRP)

2012

RFI/CMS (PBA@MR HWAAP - PBA for MMRP)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date: 202209

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of MMRP at Installation (including LTM phase): 202309

HAWTHORNE ARMY DEPOT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-008-R-01	WALKER LAKE LAND TEST RANGE	RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-013-R-01	PRE-1940 DETONATING PITS	RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-020-R-01	WHISKEY FLAT	RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWAAP-022-R-01	OLD BOMB ROCKET FIRING RANGE-EAST	RI/FS						
		RD						
		RA(C)						

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 18/12

Installation Site Types with Future and/or Underway Phases

- 1 Burn Area
(CCHWAAP-H02)
- 1 Disposal Pit/Dry Well
(CCHWAAP-I15)
- 1 Firing Range
(CCHWAAP-023)
- 3 Surface Impoundment/Lagoon
(CCHWAAP-B27B, CCHWAAP-B27C, CCHWAAP-B29)

Most Widespread Contaminants of Concern

Media of Concern

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
CCHWAAP-B29	103-41 Unlined Ponds	FRA	NATURAL ATTENUATION	2013

Duration of CR

Date of CR Inception: 198705

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201512/204508

Date of CR completion including Long Term Management (LTM): 204508

CR Contamination Assessment

Contamination Assessment Overview

Environmental restoration activities include the IRP and MMRP. On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment [ODUSD (I&E)], issued an interim policy for Defense Environmental Restoration Program (DERP) eligibility that rescinded the 1986 eligibility date for the IRP and the 2002 eligibility date for the MMRP. This made many sites previously addressed in the Army Environmental Database - Compliance-related Cleanup (AEDB-CC) Program eligible for the DERP. Sites that are now eligible for the MMRP program have been migrated from AEDB-CC and given the naming convention of other MMRP sites.

The newly eligible non munitions response (MR) type sites are considered to be IRP sites; however, the newly eligible sites are being coded as CR in AEDB-R to distinguish them from the original IRP sites and IRP metrics.

Due to new state regulatory requirements, 15 sites were reopened as CR sites (previously IRP sites). These sites are all undergoing investigations to determine if further actions are warranted at any of them.

Cleanup Exit Strategy

The RI or design phase is currently underway for all the CR sites. Please see the site-specific cleanup exit strategies for more details.

CR Previous Studies

Title

Author

Date

There are no Previous Studies

HAWTHORNE ARMY DEPOT

Compliance Restoration

Site Descriptions

Site ID: CCHWAAP-023
Site Name: Old Bomb Fenced Disposal Area

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Metals, Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
RFA.....	200209.....	200305
RFI/CMS.....	201205.....	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The Old Bomb Fenced Disposal Area is located inside the HWAD near the southern boundary in the Old Bomb Operational Range. The area is secured and monitored. There are ongoing mission and range-related activities at this site. The area has a very significant presence of surface and subsurface MEC, MC, munitions debris (MD), and industrial wastes. The approximate area of this site is 40 acres. Non-stockpile CWM is not suspected at this site; however, the driver for this site will be the industrial waste that it contains with any MD as secondary. A contract has been awarded to conduct a Phase 1 RI in this area with incidental removal.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study phase is complete.

Site ID: CCHWAAP-B27B
Site Name: 103-8/10 OXIDATION DITCH

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Metals
Media of Concern: Sediment

Phases	Start	End
RFA.....	198705.....	198808
RFI/CMS.....	201007.....	201202
DES.....	201206.....	201212
CMI(C).....	201212.....	201409

RIP Date: N/A
RC Date: 201409

SITE DESCRIPTION

SWMU B27b is in HWAD's north magazine area, inside the Bldg 103 group. The north magazine area no longer operates in its original capacity, but several of the buildings and roads are used for various purposes. Additionally, there is no public access to this SWMU or its adjacent facilities.

SWMU B27b has one inactive unlined oxidation ditch that connects to the west side of Bldgs 103-8 and 103-10 by two drain lines. The unlined oxidation ditch is approximately 1,360 feet long, 90 feet wide and mostly about four feet deep. A 50-foot segment near the head (east end) of the ditch is approximately eight feet deep with excavated soil piled along the rim of the ditch. The ditch appears to terminate into an area southwest of the catchment pits associated with Bldg 103-16. The wastewater discharge system associated with the ditch was found to be a series of drainpipes, sumps, settling tanks, and vaults. The sump area where the drain lines intersect includes two sumps, two concrete settling tanks, and two concrete distribution vaults. The unlined oxidation ditch reportedly used to contain discharged wastewater from Bldg 103-8 and Bldg 103-10. Bldg 103-10 housed a chemistry laboratory, indicating that laboratory wastewater also may have been discharged into the oxidation ditch. It has been reported that mercury was used in this laboratory and may have been released through the drain lines and through the ceiling vents as mercury vapor. Painting operations, which may have used VOCs, also were conducted at the facilities near this SWMU. The wastewater from Bldg 103-8 contained caustics, paint, and sandblasting residues from cleaning such items as ammunition cans, smokeless powder cans, and charge cans.

The depth to groundwater at SWMU B27b is estimated to be 80 feet bgs.

Investigations in 1994 and 1997 indicated soil contamination of lead and chromium at concentrations above proposed closure goals. Other potential COCs were not detected above the closure goals. A human health risk evaluation concluded that there was not an unacceptable risk to human health. Based on new state regulatory requirements, an investigation was performed, mainly for potential groundwater concerns.

A RCRA facilities investigation (RFI)/corrective measure study (CMS) was completed in February 2012. No COCs were found above regional screening levels (RSLs) in subsurface soil samples. Lead and mercury above RSL were found in sediment samples from effluent system drain lines, sumps, and settling basins. Alternative 4, excavation and off-site disposal of the effluent system components, was selected as the corrective measure. A CMI contract was awarded in December 2012.

CLEANUP/EXIT STRATEGY

Excavation and off-site disposal of the effluent system components will be performed.

Site ID: CCHWAAP-B27C

Site Name: 103-20 SURFACE IMPOUNDMENT

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Metals
Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
RFI/CMS.....	201007.....	201202
DES.....	201206.....	201212
CMI(C).....	201212.....	201409

RIP Date: N/A
RC Date: 201409

SITE DESCRIPTION

SWMU B27c is in HWAD's north magazine area, inside the Bldg 103 Group. The north magazine area no longer operates in its original capacity, but several of the buildings and roads are used for various purposes. Additionally, there is no public access to this SWMU or its adjacent facilities. Except for the training activities in Bldg 103-20, the area surrounding the SWMU is primarily open land with several inactive industrial facilities formerly used for testing, restoring, and developing munitions.

SWMU B27c has one inactive unlined impoundment, which connects to the west side of Bldg 103-20 by a drainage ditch. The impoundment measures approximately 120 feet in diameter by 10 feet deep. The impoundment had been eroded at the time of investigations and was partially filled with windblown sand with various species of vegetation growing on the impoundment floor. The interior of the impoundment had been rearranged several times by installation personnel who were practicing earth-moving operations.

The depth to groundwater at SWMU B27c is estimated to be 80 feet bgs. The flow direction is estimated to be towards the northwest. The boundaries of the SWMU are defined using annotated monuments and survey pins. One survey monument was constructed and surveyed at SWMU B27c. A brass survey pin on the monument designates the monument number HWAAP-30-1996 and the SWMU number B27c. Two corner pins were set and surveyed to define a SWMU boundary, with the monument as the northwest corners. The western wall of Bldg 103-20 defines the eastern boundary of the SWMU.

During historical site inspections (SIs), the ditch contained no soil staining indicative of releases. Investigations in 1994 and 1997 indicated surface soil contamination of lead and chromium at concentrations above proposed closure goals. Other potential COCs were not detected above the closure goals. A human health risk evaluation concluded that there was not an unacceptable risk to human health; however, lead contamination was determined to be potentially hazardous to human health based solely on the comparison to the PRG. Lead-contaminated surface soil was excavated from SWMU B27c and the excavation was backfilled.

Based on new state regulatory requirements, an investigation was performed for this site, mainly for potential groundwater concerns.

An RFI/CMS was completed in February 2012. No COCs were found above industrial RSLs in subsurface soil samples. Lead above RSL was found in the drain line to the surface impoundment. Alternative 3, excavation and off-site disposal of the effluent system components was selected as the corrective measure. A DD was completed in March 2012. A contract for CMI was awarded in December 2012.

CLEANUP/EXIT STRATEGY

Excavation and off-site disposal of the effluent system components will be performed.

Site ID: CCHWAAP-B29
Site Name: 103-41 Unlined Ponds

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Explosives, Nitrate/Nitrite
Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198705.....	198808
RFI/CMS.....	201007.....	201206
DES.....	201211.....	201302
CMI(C).....	201212.....	201305
CMI(O).....	201306.....	204306
RIP Date:	201306	
RC Date:	204306	

SITE DESCRIPTION

Site HWAAP-B29 is a series of inactive unlined surface impoundments connected by steel troughs covering an area of approximately 0.25 square miles north of Bldg 103-41. Nine impoundments at this site each measure approximately 25 by 100 by three feet, which were used for TNT wash water. Five larger ponds measure approximately 100 by 100 by 10 feet. These larger impoundments were used for ammonium picrate explosives wash water from demilitarization. Ammonium picrate, TNT-stained soils, and black burn residue in the impoundments are evident.

Groundwater sampling in 2000 at this site detected up to 29 ug/l of TNT and other organic, inorganic, and nitrogen-bearing compounds. Current GWM shows low levels (below action levels) of explosives. Nitrate levels greatly exceed the drinking water standards of the state of Nevada.

The RI work in 1994 included groundwater sampling, surface soil and hand auger sampling, and CPT soundings. A pilot study successfully treated 300 cy of ammonium picrate-contaminated soil using Windrow composting. During 2003, through a teaming effort with the NDEP, PRGs for ammonium picrate were raised from seven parts per million (ppm) to 120 ppm for an industrial site. This should expedite cleanup of this site.

Based on new state regulatory requirements, an investigation is underway for this site, mainly for potential groundwater concerns. Twelve wells were installed during FY11 to determine COCs in shallow water-bearing zones. MNA sampling is planned for 30 years in the CMI(O) phase. A contract for natural attenuation monitoring was awarded Dec 2012. Sampling will begin in 2013.

CLEANUP/EXIT STRATEGY

Natural attenuation is planned. Five-year reviews and LUC costs are tracked in site CCHWAAP-I15.

Site ID: CCHWAAP-H02
Site Name: Burn Pit @ pdo h02

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Other (Debris Material), Petroleum,
Oil and Lubricants (POL)
Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
RFI/CMS.....	201110.....	201212
DES.....	201210.....	201212
CMI(C).....	201301.....	201406

RIP Date: N/A
RC Date: 201406

SITE DESCRIPTION

CCHWAAP-H02 is composed of two unlined v-shaped open trenches in the salvage yard next to the Hawthorne recycling center. One measures 250 by 30 ft. and 20 ft. deep. The installation burns unsalable, non-pentachlorophenol (PCP) treated wood, scrap wire, and other products in the trench. The site was in service from 1970 to 1996. An RFI performed in 2011/2012 found that dioxins were the COCs. Concentrations above cleanup goals are limited to debris material and have not migrated to surrounding soil or groundwater. A DD was approved in March 2012; a contract award for CMI was awarded in December 2012.

CLEANUP/EXIT STRATEGY

A DD was approved and a CMI(C) is planned.

Site ID: CCHWAAP-I15
Site Name: 101-42 CATCHMENT PIT

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Explosives
Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199207.....	199403
RFI/CMS.....	201007.....	201310
DES.....	201311.....	201409
CMI(C).....	201501.....	201511
CMI(O).....	201512.....	204508
RIP Date:	201512	
RC Date:	204508	

SITE DESCRIPTION

Site SWMU I15 is in HWAD's central magazine area, on the southeast side of the 101 Production Area. Site SWMU I15 has two inactive unlined catchment pits. The upper catchment pit (eastern most) is approximately 175 feet west of Bldg 101-42 and the second, lower catchment pit (western most) is approximately 375 feet west of Bldg 101-42. The upper catchment pit is approximately 70 feet long by 15 feet wide and is up to five feet deep in the center. A four-inch diameter transite pipe, which likely was used to discharge wastewater from Bldg 101-41, is at the head of the catchment pit nearest Bldg 101-42. The lower catchment pit is approximately 100 feet west of the upper catchment pit and measures 110 feet long by 60 feet wide and is up to six feet deep. A four-inch transite pipe connects the upper catchment pit to the lower pit. TNT-stained soils were observed several feet up the sidewalls and on the bottom of this lower catchment pit with intensified staining three to six inches beneath the surface. Based on nearby wells, groundwater beneath SWMU I15 is expected to be at a depth of approximately 135 feet bgs.

The operating period of the building was from 1940 to the early-1970s. A study in 1994 included line locating to determine the pathway of the contaminated wastewater from the building to the pits. Data collection included 20 soil gas samples, 12 surface soil samples and one cone penetrometer sounding to assess the optimal depth to collect subsurface soil samples. No subsurface soil samples were collected. The surface soil samples were found to contain up to 1500 mg/kg of explosives. The soil from this site was combined with the soil from B20 in a pilot study of windrow composting. The soil was remediated and the pits were backfilled with clean soil. The RA was completed in 1998.

Based on new state regulatory requirements, an investigation is underway for this site, mainly for potential groundwater concerns. Completion of the CMS and DD is included in the PBC currently in progress and is expected to be completed by September 2013.

In addition, installation-wide LTM and monitoring costs are also included in CCHWAAP-I15.

CLEANUP/EXIT STRATEGY

The CMS and DD are expected to be completed in 2013.

In addition, installation-wide LUC and five-year review costs are included in CCHWAAP-I15.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCHWAAP-A06B	OLD BOMB DISPOSAL AREA 2	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6B.
CCHWAAP-A06C	OLD BOMB DISPOSAL AREA 3	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6C.
CCHWAAP-A06D	OLD BOMB DISPOSAL AREA 4	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6D.
CCHWAAP-A06E	OLD BOMB DISPOSAL AREA 5	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6E.
CCHWAAP-B21	101-41/42 CATCHMENT PIT	201203	This site will now be handled under site CCHWAAP-I15.
CCHWAAP-C04	OLD BOMB POPPING FURNACE 1 & 2	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C04.
CCHWAAP-G01B	OLD BOMB OD/OB GROUND 2 & 3 D AREA	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01B.
CCHWAAP-H03	ROAD & GROUNDS WASTE OB PIT	199904	Site was determined to be within the boundaries of J12 which was closed April 19, 2001. The NDEP was petitioned to include HO3 in the April 19, 2001 closure and they concurred in a letter dated November 21, 2001.
CCHWAAP-I22	OLD BOMB OPEN BURNING PIT	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I22.
CCHWAAP-I23	OLD BOMB/ROCKET METAL LANDFILL	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I23.
CCHWAAP-K07	OLD BOMB DDT BURIAL SITE	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-K07.
CCHWAAP-WADF	Western Area Demil Facility	201110	This site is an active facility and not eligible for ER,A funds.

CR Schedule

Date of CR Inception: 198705

Past Phase Completion Milestones

1988

RFA (CCHWAAP-A06B - OLD BOMB DISPOSAL AREA 2, CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3, CCHWAAP-A06D - OLD BOMB DISPOSAL AREA 4, CCHWAAP-A06E - OLD BOMB DISPOSAL AREA 5, CCHWAAP-B21 - 101-41/42 CATCHMENT PIT, CCHWAAP-B27B - 103-8/10 OXIDATION DITCH, CCHWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, CCHWAAP-B29 - 103-41 Unlined Ponds, CCHWAAP-C04 - OLD BOMB POPPING FURNACE 1 & 2, CCHWAAP-G01B - OLD BOMB OD/OB GROUND 2 & 3 D AREA, CCHWAAP-H02 - Burn Pit @ pdo h02, CCHWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, CCHWAAP-WADF - Western Area Demil Facility)
 CS (CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3)

1992

RFA (CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT, CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)

1994

RFA (CCHWAAP-I15 - 101-42 CATCHMENT PIT)

1995

CS (CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)

1996

CS (CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT)

1999

RFI/CMS (CCHWAAP-H03 - ROAD & GROUNDS WASTE OB PIT)

2000

RFA (CCHWAAP-K07 - OLD BOMB DDT BURIAL SITE)

2003

RFA (CCHWAAP-023 - Old Bomb Fenced Disposal Area)

2012

RFI/CMS (CCHWAAP-A06B - OLD BOMB DISPOSAL AREA 2, CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3, CCHWAAP-A06D - OLD BOMB DISPOSAL AREA 4, CCHWAAP-A06E - OLD BOMB DISPOSAL AREA 5, CCHWAAP-B21 - 101-41/42 CATCHMENT PIT, CCHWAAP-B27B - 103-8/10 OXIDATION DITCH, CCHWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, CCHWAAP-B29 - 103-41 Unlined Ponds, CCHWAAP-C04 - OLD BOMB POPPING FURNACE 1 & 2, CCHWAAP-G01B - OLD BOMB OD/OB GROUND 2 & 3 D AREA, CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT, CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL, CCHWAAP-K07 - OLD BOMB DDT BURIAL SITE, CCHWAAP-WADF - Western Area Demil Facility)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
---------	-----------	--------------	-------------

Final RA(C) Completion Date: 201511

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of CR at Installation (including LTM phase): 204508

HAWTHORNE ARMY DEPOT CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-023	Old Bomb Fenced Disposal Area	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-B27B	103-8/10 OXIDATION DITCH	CMI(C)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-B27C	103-20 SURFACE IMPOUNDMENT	CMI(C)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-B29	103-41 Unlined Ponds	CMI(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-H02	Burn Pit @ pdo h02	CMI(C)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CCHWAAP-I15	101-42 CATCHMENT PIT	RFI/CMS						
		DES						
		CMI(C)						
		CMI(O)						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201204

Restoration Advisory Board (RAB): No

Reason Not Established: The community has expressed no sufficient, sustained interest in a RAB.

Community Interest Solicited on: 201108

Efforts Taken to Determine Interest

In December 1995, to facilitate public involvement in the HWAD IRP, HWAD published public notices in the Mineral County Independent Newspaper for establishment of a RAB. The installation has regularly solicited community participation to establish a RAB. This has included an open house for the general public, statewide TV coverage of the HWAD IRP, public notices in the local newspapers, presentations to community clubs and high schools, and a public outreach through the local library or the web site at <http://www.ndep.state.gov>.

Results

Only two inquiries were received from the public notice.

Follow-up Procedures

The installation will continue to solicit community involvement every two years. The NDEP is a full partner in the HWAD IRP and is supportive of the efforts to form a RAB for the depot. They also recognize the difficulties of recruiting RAB members in a rural location such as Hawthorne.

Additional Community Involvement Information

Community interest was last solicited in August 2011.

Administrative Record is located at

Hawthorne Army Depot - Environmental Branch
5 South Maine Avenue
Hawthorne, Nevada 89415-5000

Information Repository is located at

TBD

Current Technical Assistance for Public Participation (TAPP):N/A

TAPP Title: N/A

Potential TAPP: N/A

